

Michigan Law Review

Volume 113 | Issue 5

2015

Valuing Control

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Peter DiCola, *Valuing Control*, 113 MICH. L. REV. 663 (2015).

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VALUING CONTROL

Peter DiCola*

Control over property is valuable in and of itself. Scholars have not fully recognized or explored that straightforward premise, which has profound implications for the economic analysis of property rights. A party to a property dispute may actually prefer liability-rule protection for an entitlement resting with the other party to liability-rule protection for an entitlement resting with her. This Article presents a novel economic model that determines the conditions under which that is the case—by taking account of how parties value control. The model suggests new opportunities for policymakers to resolve conflicts and to develop better information about property disputes through policy experiments. The Article provides recommendations for implementing this new approach and suggests applications in the areas of copyright, trademark, patent, and privacy law.

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* Associate Professor of Law, Northwestern University School of Law. I would like to thank David Dana, Erin Delaney, Zev Eigen, Lee Anne Fennell, Ezra Friedman, Wendy Gordon, Kembrew McLeod, Bill Miller, Laura Pedraza-Fariña, Peggy Radin, Max Schanzenbach, Dave Schwartz, Nadav Shoked, Jim Speta, and Matt Spitzer for helpful comments, suggestions, and conversations. Shatra Bell, Nathan Brenner, and Justin Morgan provided intrepid and insightful research assistance. All errors are my own responsibility.

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INTRODUCTION

Control over property—the power to decide whether a particular use of a resource may occur—is valuable in and of itself. Process matters, not just outcome. Although this is a straightforward premise, its implications for the economic analysis of property rights have not been fully explored. This Article takes the premise that control is valuable for its own sake—not just as a means to obtain favorable outcomes—and models the full implications of that premise. This analysis suggests that policymakers should seek to understand the value that parties to a property dispute place on decisionmaking authority and that they should look to a broader set of property regimes than they currently do.¹ In the right circumstances, this would create opportunities to reach more efficient and, perhaps, fairer compromises between disputants.

The notion of subjective and idiosyncratic valuation is familiar in the context of real property.² People often place subjective values on their

1. By “property regimes,” I mean the choice between property rules and liability rules. See Guido Calabresi & A. Douglas Melamed, *Property Rules, Liability Rules, and Inalienability: One View of the Cathedral*, 85 HARV. L. REV. 1089 (1972) (providing the foundational analysis of the distinction).

2. See, e.g., Daphna Lewinsohn-Zamir, *Identifying Intense Preferences*, 94 CORNELL L. REV. 1391, 1394–95 (2009) (using subjective valuations of land as a leading example of the general phenomenon of subjective valuation); Katrina Miriam Wyman, *The Measure of Just Compensation*, 41 U.C. DAVIS L. REV. 239, 262–66 (2007) (describing, although later rejecting, the appeal of subjective measures of value of real property in the context of takings).

homes; the specific performance remedy in real property is designed to protect this subjective value.³ And when a taking occurs, controversy can result, partly because many people believe that “just compensation” for a taking does not adequately account for a homeowner’s subjective valuation.⁴ Users of property, as opposed to owners, may also have subjective valuations. For instance, the holder of a dominant estate might place idiosyncratic value on an easement.⁵

This Article emphasizes that one important part of the subjective value of property derives from having authority to decide how that property may be used.⁶ Many property regimes afford either owners or users the power to decide whether a transfer will take place. As Professor Fennell observes, “there is arguably a deeper value associated with autonomy that is different in kind” from the other components of subjective value, that is, the value of enjoyment and the surplus value obtainable in trade.⁷ Control over property, whether by the owner or the user, provides an opportunity to exercise autonomy that is valuable in and of itself.

From this point of departure, the law and economics of property rules and liability rules can be analyzed in a new way. Historically, liability-rule protection for owners (Calabresi and Melamed’s “Rule Two”) has been common, while liability-rule protection for users (“Rule Four”) has been thought quite unusual.⁸ Identifying the value of control raises the possibility that owners might actually prefer Rule Four to Rule Two.⁹ Conversely, users might prefer Rule Two to Rule Four. In other words, assuming entitlements will be protected only by liability rules, parties to property disputes might

3. See Timothy J. Muris, Comment, *The Costs of Freely Granting Specific Performance*, 1982 DUKE L.J. 1053, 1054–55 (acknowledging, in the course of criticizing the remedy, that the goal of specific performance is “protecting subjective value”).

4. See *Kelo v. City of New London*, 545 U.S. 469, 489 (2005); see also Ilya Somin, *The Limits of Backlash: Assessing the Political Response to Kelo*, 93 MINN. L. REV. 2100, 2108 (2009) (discussing the “widespread outrage” at the decision).

5. See, e.g., Sally Brown Richardson, *Nonuse and Easements: Creating a Pliability Regime of Private Eminent Domain*, 78 TENN. L. REV. 1, 13 (2010) (discussing an example in which the holders of a servient and dominant estate both have a “personal value” of an easement).

6. See Janice Nadler & Shari Seidman Diamond, *Eminent Domain and the Psychology of Property Rights: Proposed Use, Subjective Attachment, and Taker Identity*, 5 J. EMPIRICAL LEGAL STUD. 713, 723 (2008) (discussing the psychological value of exercising decisionmaking authority over real property).

7. Lee Anne Fennell, *Taking Eminent Domain Apart*, 2004 MICH. ST. L. REV. 957, 967.

8. See Calabresi & Melamed, *supra* note 1, at 1115–16 (numbering the rules); see also James E. Krier & Stewart J. Schwab, *Property Rules and Liability Rules: The Cathedral in Another Light*, 70 N.Y.U. L. REV. 440, 444, 450–51 (1995) (discussing the rarity of Rule Four and the prevalence of Rule Two).

9. One would expect that a party would rather have an entitlement to a particular use of property than not. See Calabresi & Melamed, *supra* note 1, at 1090 (discussing the choice of entitlement as prior to the choice of how to protect that entitlement).

well prefer for the *other* party to be entitled to a use.¹⁰ The parties' preferences across rules depend on the value they place on control itself.

The possibility that either party might have this unorthodox preference makes Rule Four more worthy of practical consideration as a policy tool. It also presents an opportunity. If policymakers can identify circumstances in which the two parties share a preference for Rule Two or Rule Four, that shared preference could represent the best compromise. And for some disputes, that preference will also be the best solution for society.

Part I explains control as a separate value from enjoyment or compensation from trade. Part II provides an original economic analysis of property rules and liability rules that incorporates the value of control. Part III then outlines some considerations relevant to implementing Rule Four, including critiques, potential responses, and the possibility of using liability rules for experimental policy analysis. Part IV discusses four specific areas in which policymakers could apply Rule Four more widely: copyright, trademark, patent, and privacy law. The Article concludes with a discussion of avenues for future research.

I. CONTROL AS A DISTINCT VALUE

This Part first explains the value of control and distinguishes it from the value of deriving enjoyment from or receiving compensation for a particular use of property. Next, I briefly summarize Calabresi and Melamed's framework, which contrasts property rules and liability rules as methods for protecting entitlements. For my purposes, the central insight of their famous article is the decoupling of compensation and control that a liability rule effects. In the third and final Section, I discuss the relative infrequency with which Rule Four has been used.

A. *Property Disputes Are About Both Compensation and Control*

A person can value property ownership for two kinds of reasons.¹¹ The first kind is based on outcomes, such as enjoyment of the property or financial benefits from its sale or licensing.¹² For shorthand, I refer to all these

10. If considering all possible property regimes, not just those featuring liability rules, most parties will favor having the entitlement and having it protected with a property rule. See Krier & Schwab, *supra* note 8, at 450–51 (discussing pragmatic differences between property and liability rules).

11. The economic and expressive differences between tangible and intangible goods may require special attention, but for the most part my analysis will apply to both. On the perils of making an easy equivalence between real and intellectual property, see JAMES BOYLE, *THE PUBLIC DOMAIN: ENCLOSING THE COMMONS OF THE MIND* 83–121 (2008) (using a vivid allegory to explore the limitations of analogies to real property in intellectual property law).

12. The economic argument that connects property rights to compensation is that exclusive rights give the rights holder an enforcement tool against would-be infringers that deters enough infringement to allow the rights holder to earn an economic profit. See generally Harold Demsetz, *Toward a Theory of Property Rights*, 57 AM. ECON. REV. 347 (1967). In theory,

outcome-based goods under the umbrella term *compensation*.¹³ The second kind of value is procedural, relating to the ability to make autonomous decisions about how others use the property in question. I refer to this kind of good as *control*.¹⁴

For some people, in some situations, these two categories collapse into one: the point of controlling use of the property is to earn compensation. Having the right to restrict or delay how and when others use the property can generate or maintain scarcity that garners more compensation for a rights holder in the long run.

But money is not always the underlying motivation for valuing control. Some individuals value control over uses of property at least partly for the sake of control itself. Owners of real property, for example, value decision-making power over how others may use their land.¹⁵ Users of real property place an opposing but similar value on control. For a person experiencing a nuisance from activity conducted on a neighbor's land, the freedom to practice one's profession in a certain location is at stake—not just money.¹⁶

Many creators of intellectual property view their work as an extension of their personalities or identities, which can lead them to place subjective and idiosyncratic value on controlling uses of their works.¹⁷ Control can matter even when the owners of intellectual property rights are not the original

this amount of profit works as an incentive for parties organized by the rights holder to expend whatever labor and capital are required to create, market, and distribute the work. *Id.* at 356.

13. The idea of using compensation as an umbrella term is that compensation, here meaning outcome-based value, can be taken in kind as enjoyment or taken as the surplus from trades (sales or licenses).

14. In terms of Professor Morris's four-component model of the value of entitlements, my use of the term "control" corresponds to Morris's term "veto power." See Madeline Morris, *The Structure of Entitlements*, 78 CORNELL L. REV. 822, 833–40 (1993).

15. See Jeffrey J. Rachlinski & Forest Jourden, *Remedies and the Psychology of Ownership*, 51 VAND. L. REV. 1541, 1545 (1998) ("In losing the right to an injunctive remedy, the plaintiffs [in *Boomer v. Atlantic Cement Co.*, 257 N.E.2d 870 (N.Y. 1970)] lost something more than leverage in their negotiations with Atlantic Cement, and lost something distinct from an attachment to their homes; they lost the power to refuse to sell their rights to the quiet enjoyment of their property.").

16. *Sturges v. Bridgman*, [1879] 11 Ch.D. 852 (Eng.); see also Laura S. Underkuffler, *Teaching Property Stories*, 55 J. LEGAL EDUC. 152, 154 (2005) (citing A.W. Brian Simpson, *The Story of Sturges v. Bridgman: The Resolution of Land Use Disputes Between Neighbors*, in *PROPERTY STORIES* 9 (Gerald Korngold & Andrew P. Morriss eds., 1st ed. 2004)) ("Neither Sturges nor Bridgman wished to move his business.").

17. There is an extensive literature on moral rights and the Lockean, Hegelian, or Kantian justifications for them. See, e.g., Justin Hughes, *The Philosophy of Intellectual Property*, 77 GEO. L.J. 287, 330–50 (1988) (discussing the Hegelian, personality-based view of intellectual property); Roberta Rosenthal Kwall, *Inspiration and Innovation: The Intrinsic Dimension of the Artistic Soul*, 81 NOTRE DAME L. REV. 1945, 1975–77 (2006) (describing autonomy as one aspect of the civil-law tradition of protecting creators' moral rights); Kim Treiger-Bar-Am, *Kant on Copyright: Rights of Transformative Authorship*, 25 CARDOZO ARTS & ENT. L.J. 1059, 1075–76 (2008) (discussing Kant's view of autonomy as related to choice).

creators.¹⁸ Users of intellectual property also have an interest in control. Downstream creators¹⁹ value the creative freedom to make use of existing works as a form of personal autonomy, independent of the financial gain from selling the new works.²⁰ Consumers value the freedoms to read, to listen, or to watch, such as the privilege to record a television show and watch it later.²¹ Such freedoms sometimes allow consumers to avoid purchasing copies, providing value that falls within the category of compensation. But control over one's own viewing—outside the strictures of licensing and permissions—is a separate reason to value user rights.²²

Several examples of intellectual property disputes suggest circumstances in which a desire for control might accompany—or even supersede—a desire for compensation. A musician may wish to prevent a politician whom he does not support from playing his song at a public rally.²³ A small-business owner may want to block the use of his company's brand name, even if used in a totally different geographic region.²⁴ A photographer may object to

18. When the owner is not the original creator—that is, when the owner is an intermediary like a publisher, studio, or record label—the managers and employees of that intermediary may value control separately from compensation. Cf. BRUCE HARING, *BEYOND THE CHARTS: MP3 AND THE DIGITAL MUSIC REVOLUTION* 85 (2000) (quoting a record-industry representative, Recording Industry Association of America CEO Hilary Rosen, speaking in terms of control). Moreover, in some situations in which an intermediary owns the intellectual property, the creator retains a contractual right to veto certain types of licenses. See KEMBREW MCLEOD & PETER DiCOLA, *CREATIVE LICENSE: THE LAW AND CULTURE OF DIGITAL SAMPLING* 171, 232 (2011) (providing an example of the right to veto sample licenses and discussing the general phenomenon within the recording industry).

19. In this terminology, the upstream creator is the creator of the preexisting work, and the downstream creator is the creator of a derivative work, such as a remix or mash-up.

20. “[I]ndividual autonomy includes the freedom to interact in an active way with existing cultural materials, to recreate and reshape them, and to express one’s own voice through a dialogue with those of others.” Oren Bracha, *Standing Copyright Law on Its Head? The Googolization of Everything and the Many Faces of Property*, 85 TEX. L. REV. 1799, 1847 (2007). For an illustration of this in the context of the digital sampling of music, see MCLEOD & DiCOLA, *supra* note 18, at 7–8.

21. See *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 447–56 (1984) (holding that unauthorized “time-shifting” is fair use).

22. See Jessica Litman, *Lawful Personal Use*, 85 TEX. L. REV. 1871, 1908 (2007) (describing personal uses of copyrighted works as “historic liberties”); see also Julie E. Cohen, *The Place of the User in Copyright Law*, 74 FORDHAM L. REV. 347, 370–72 (2005) (“[T]he range of practices subsumed under the label ‘copying’—including but not limited to duplication, imitation, performance, and allusion—are critically important means of expressing one’s beliefs, values, and affiliations.”).

23. See Matthew J. Cursio, Comment, *Born to Be Used in the USA: An Alternative Avenue for Evaluating Politicians’ Unauthorized Use of Original Musical Performances on the Campaign Trail*, 18 VILL. SPORTS & ENT. L.J. 317, 318 (2011) (relating the story of Bruce Springsteen’s objection to the use of his song “Born in the U.S.A.” by President Reagan’s reelection campaign).

24. See, e.g., *Competing for the Most Creative Beer Names*, HERE & NOW (July 10, 2013), <http://hereandnow.wbur.org/2013/07/10/creative-beer-names> (describing how Sixpoint Brewery in Brooklyn asserted trademark rights in the name “Righteous” for a rye IPA).

a visual artist's incorporating his photographs into collages that the photographer perceives as denigrating the solemnity of his work about a religious community.²⁵ A novelist may act to squelch attempts to use characters from her books in unauthorized sequels.²⁶

These examples can be reversed to show how users of intellectual property may also place value on control—for them, the freedom to engage in a particular use. A politician may want the power to choose a song to express a point about his political or social views.²⁷ A small-business owner may have his heart set on a name close to the name another business already uses.²⁸ A visual artist may feel that a photograph is instrumental within a collage he has assembled.²⁹ A writer may want to continue her favorite character's story and take it in a radical or critical new direction.³⁰

Each owner and user in those situations may have pecuniary interests, whether in earning money from his or her own creations or in avoiding licensing fees. But these examples evoke the importance of considering the value of control separately from these pecuniary interests. Both property owners and users often desire control for its own sake.³¹ Given the competing interests of owners and users, the law must decide which claims of control are legitimate and which claims are problematic. In situations where one party highly values control, even an offer of financial compensation may not satisfy that party.

25. See, e.g., *Cariou v. Prince*, 714 F.3d 694, 699 (2d Cir. 2013) (describing the views of the plaintiff, photographer Patrick Cariou, in favor of classical art and against pop art in reference to his photographs of Rastafarians).

26. See, e.g., Anne Rice, *Anne's Messages to Fans*, ANNERICE.COM, <http://www.annerice.com/ReaderInteraction-MessagesToFans.html> (last visited Sept. 15, 2014) ("I do not allow fan fiction. The characters are copyrighted. It upsets me terribly to even think about fan fiction with my characters." (internal quotation marks omitted)).

27. E.g., *Cursio*, *supra* note 23, at 318 n.8 (explaining President Reagan's motivation for using Springsteen's song).

28. E.g., *Competing for the Most Creative Beer Names*, *supra* note 24 (describing the disappointment of the owner of Renegade Brewing in Denver when giving up the name Rye-teous for a rye IPA).

29. E.g., *Cariou*, 714 F.3d at 707 (describing artist Richard Prince's motivation to use Cariou's photographs in collages that comment on musical culture).

30. See, e.g., Anupam Chander & Madhavi Sunder, *Everyone's a Superhero: A Cultural Theory of "Mary Sue" Fan Fiction as Fair Use*, 95 CALIF. L. REV. 597, 599–600 (2007) (describing fan fiction authorship as an empowering way to combat stereotypes and social hierarchy); Rebecca Tushnet, *Legal Fictions: Copyright, Fan Fiction, and a New Common Law*, 17 LOY. L.A. ENT. L.J. 651, 657–58 (1997) (describing how authors of fan fiction assert their right to create and deny that authors can control interpretations, sequels, and retellings).

31. Many owners and users believe that the law does in fact vindicate their interest in control on their behalf. Scholars and policymakers must therefore tangle with two crucial facts about owners and users of property: the normative desire (seeing control as a good) and the descriptive position (thinking they have control). In other words, resolving disputes requires understanding all the parameters of those disputes, including the parties' valuations of control for its own sake. See *infra* Part II (discussing policy implications based on the goal of dispute resolution).

The fact that both owners and users place a separate value on control does not imply that their valuations will be symmetric. Nor does it imply that society should treat owners' and users' interests as equally valid. In any property or intellectual property dispute, one side's claim to control may be more appealing than the other's—or even constitutionally required.³² My claim is rather that each party to a property dispute may value autonomy for its own sake. I want to emphasize that control is at stake in property disputes, and not just as a means to secure enjoyment or gains from trade.

Private and public law reflect this distinction between compensation and control. In many governmental allocations, property owners routinely receive some compensation and some control as a result of their entitlements.³³ Similarly, in many property transactions, property owners receive some compensation but retain some control over the resource being transferred.³⁴ Thus, to describe the world more realistically, it will be advantageous to view the value of particular uses of property in terms of two separate goods: compensation and control.

B. *Decoupling Compensation from Control*

After modeling owners' and users' valuations in terms of compensation and control, the next step in the argument is to consider the assignment, design, and enforcement of entitlements. An entitlement is a right to enjoy a resource or good, such as a particular use of property, and a right to prevent others from doing so.³⁵

In their famous article, Calabresi and Melamed focus on two methods of protecting entitlements: property rules and liability rules.³⁶ Property-rule protection, in brief, means that the entitlement holder has control over the resource and may demand his or her own price, or even refuse to sell.³⁷

32. For example, fan fiction and appropriation art will often qualify as fair uses. A vibrant fair-use doctrine may be constitutionally necessary to avoid conflict between copyright and free speech. *See generally* Neil Weinstock Netanel, *First Amendment Constraints on Copyright After Golan v. Holder*, 60 UCLA L. REV. 1082 (2013).

33. This is the case whenever the government grants an entitlement and protects it with a property rule. *See* Calabresi & Melamed, *supra* note 1, at 1115–16. The owner of such a property right may enjoy the proceeds from the land as well as decisionmaking authority—the property right cannot be transferred without her permission.

34. This occurs, for example, whenever real property is transferred with the encumbrance of a servitude. *See* Molly Shaffer Van Houweling, *The New Servitudes*, 96 GEO. L.J. 885, 900–01 (2008) (describing how servitudes present “the problem of the future” when land is conveyed subject to them).

35. Calabresi & Melamed, *supra* note 1, at 1090 (describing entitlements in terms of “access to goods, services, and life itself”); *see also* Louis Kaplow & Steven Shavell, *Property Rules Versus Liability Rules: An Economic Analysis*, 109 HARV. L. REV. 713, 723 (1996) (discussing “the entitlement to be free from harm”).

36. *See* Calabresi & Melamed, *supra* note 1. Calabresi and Melamed do identify another way of protecting entitlements: inalienability. *Id.* at 1111. But their article—as well as mine—focuses on the other two methods.

37. *Id.* at 1092.

Liability-rule protection, by contrast, means that the entitlement holder has only a right to governmentally determined compensation if others use the good to which he or she is entitled.³⁸

Using this distinction between property rules and liability rules, Calabresi and Melamed describe four broad types of property regimes or, in their terminology, rules.³⁹ Rule One (injunctive relief for the property owner) and Rule Three (an exception, limitation, or defense for the user) are frequently employed in both property law and intellectual property law.⁴⁰ These two property rules put both compensation and control in the same hands: either those of the property owner or those of the property user.

Meanwhile, Rule Two represents liability-rule protection: that is, money damages alone, for the property owner. This rule arises in many contexts as well.⁴¹ Rule Two gives the property owner a right to compensation for a particular use of her property but denies her the decisionmaking authority to block uses. Accordingly, any user has the option to make a use of the property (within the confines of a governmental definition of the uses to which Rule Two applies) as long as she pays the statutorily or judicially chosen price. Rule Two decouples compensation and control. It denies the property owner control, which is a significant reason why intellectual property owners vehemently oppose compulsory licenses⁴² and why statutory licenses are sometimes imposed in recognition of property owners' bad behavior.⁴³

Rule Four, by contrast, means something unusual in property law—liability-rule protection for the user. Like Rule Two, Rule Four decouples compensation and control. Under Rule Four, the user would have the baseline entitlement, but the intellectual property owner would have an option to pay the user a statutorily or judicially determined price to block the use.⁴⁴ In simpler terms, the user would receive compensation, but the owner would have control.

38. *Id.*

39. *Id.* at 1115–16.

40. *See id.*

41. *Id.*

42. *See* Robert Stephen Lee, *An Economic Analysis of Compulsory Licensing in Copyright Law*, 5 W. NEW ENG. L. REV. 203, 208–09 (1982) (describing the music publishers' long history of opposing compulsory licensing).

43. *See, e.g.*, Peter DiCola & Matthew Sag, *An Information-Gathering Approach to Copyright Policy*, 34 CARDOZO L. REV. 173, 198–203 (2012) (discussing the imposition of compulsory licenses on sheet-music copyright owners who refused to license all but one of the player piano roll companies).

44. *See* Calabresi & Melamed, *supra* note 1, at 1116–18; *see also* Dotan Oliar, *The Copyright-Innovation Tradeoff: Property Rules, Liability Rules, and Intentional Infliction of Harm*, 64 STAN. L. REV. 951, 989–93 (2012) (discussing how Rule Four would operate and the incentives it would give the parties to a copyright dispute).

C. *Disfavoring Rule Four—Leaving an Arrow in the Quiver*

Rule Four, however, has been employed much less frequently than Rule Two in real property.⁴⁵ It is absent from intellectual property law.⁴⁶ This presents a long-standing puzzle as to why Rule Four has gone missing. Calabresi and Melamed, for their part, invited readers to notice the absence of Rule Four in the common law.⁴⁷ In this Article, I urge scholars and policy-makers to notice again that property law—intellectual property law in particular—rarely employs Rule Four. And the question becomes, Why not?

Some commentators disfavor liability rules in general, finding them unnecessary or preferring market prices to government-set prices.⁴⁸ Rule Four in particular raises concerns about transaction costs when the dispute involves one owner but many users.⁴⁹ (The property disputes that I focus on in this Article involve one owner and one user.) Rule Four also raises concerns about extortion, because users might “come to the nuisance” and hope to get paid off.⁵⁰ Rule Four could give an advantage to wealthier owners at the direct expense of users and at the indirect expense of less wealthy owners.⁵¹ In some applications, Rule Four seems to interfere with important rights.⁵² More than anything, Rule Four may seem undesirable only because it is unfamiliar.⁵³

Despite the counterintuitive nature of Rule Four and its attendant problems, this Article suggests that the rule has some practical appeal. If compensation and control are separately valued goods, and if property owners vary in their preferences, then there will be some instances in which property owners actually *prefer* Rule Four to Rule Two. Such owners would be those who value control relatively highly. Similarly, there may also be disputes in which the corresponding property users prefer Rule Four to Rule

45. See *supra* note 8 and accompanying text.

46. See Dan L. Burk, *Intellectual Property in the Cathedral*, in *ACCESS TO INFORMATION AND KNOWLEDGE: 21ST CENTURY CHALLENGES IN INTELLECTUAL PROPERTY AND KNOWLEDGE GOVERNANCE* 95, 101 (Dana Beldiman ed., 2013) (“There has been little consideration as to how such a rule might play out in intellectual property, rather than real property.”); cf. McLEOD & DiCOLA, *supra* note 18, at 261–66 (performing the thought experiment of applying Rule Four in the context of sample licensing in the music industry but acknowledging the unfamiliarity of the rule).

47. Calabresi & Melamed, *supra* note 1, at 1116 (“Missing is a fourth rule . . .”). This was soon to be remedied by the nearly contemporaneous decision in *Spur Industries, Inc. v. Del E. Webb Development Co.*, 494 P.2d 700, 708 (Ariz. 1972). For a discussion of this intellectual history, see Ian Ayres & Paul M. Goldbart, *Optimal Delegation and Decoupling in the Design of Liability Rules*, 100 MICH. L. REV. 1, 4 (2001) (“As fate would have it, the fourth box would not stay empty long.”).

48. See *infra* Section III.B.1.

49. See Calabresi & Melamed, *supra* note 1, at 1116–17; see also Krier & Schwab, *supra* note 8, at 450.

50. See *infra* Section III.B.2.

51. See *infra* Section III.B.3.

52. See *infra* Section III.B.4.

53. See *infra* Section III.B.1.

Two. Such users would be those who value compensation relatively highly. The converse is also true; there can be situations in which both parties prefer Rule Two to Rule Four.

Now suppose that, in some circumstances, the two property rules (Rules One and Three) are either undesirable or unworkable. When that occurs, and when the parties agree in their preference for one of the two liability rules—the two policy options that remain on the table—policymakers should strongly consider adopting the jointly preferred liability rule as the property regime.⁵⁴ While other factors could recommend a different regime,⁵⁵ policymakers should take advantage of situations in which one party to the property dispute tends to value control relatively highly and the other party tends to value compensation relatively highly. Such situations represent opportunities to reach an acceptable compromise among the parties and to benefit society by resolving disputes more fairly and efficiently.

Much of the law-and-economics literature about property disputes has compared property rules and liability rules from the perspective of social efficiency.⁵⁶ My Article focuses instead on comparing the two liability rules from the perspective of the parties. This new focus illuminates a possible path to social efficiency.

I do not mean to contend that Rule Four should necessarily apply very often. Without empirical evidence, policymakers cannot know how often parties to a particular type of property dispute have the same liability-rule preference.⁵⁷ And the property rules may only seldom be discarded as undesirable options. Instead, my argument is that policymakers should seek targeted opportunities to deploy Rule Four. The absence of this rule from intellectual property law has unnecessarily limited the policy space, and this absence has also clouded scholars' and policymakers' collective understanding of the values of compensation and control.

II. THE VALUE OF CONTROL IN PROPERTY DISPUTES

This Part briefly recounts the standard law-and-economics account of property rules and liability rules. It then modifies this standard account by treating as distinct the values of compensation and control. This Part concludes by addressing critiques of my new approach.

This Article examines disputes over particular uses of property—such as real estate, an invention, an expressive work, or a brand name. For simplicity, I will refer to a single owner of a tangible or intangible resource as the *owner*. This individual or entity may or may not end up receiving property rights over the use in question. In other words, owner is shorthand for

54. See *infra* Section II.B.5.

55. One reason that could tip the scales the other way, against the shared preference of the parties, would be externalities on third parties to the dispute. See *infra* Section III.A.1.

56. See, e.g., Calabresi & Melamed, *supra* note 1; Kaplow & Shavell, *supra* note 35; Krier & Schwab, *supra* note 8.

57. See *infra* Section III.C (suggesting how policymakers can use experiments to begin collecting such information).

“owner with some rights over some resource, one whose rights may or may not extend to the disputed use.” On the other side of the dispute, I will refer to a potential user of that good simply as the *user* rather than the potential user or the “person who wants to use the resource in a particular way.”

The model in this Article assumes that the potential for harm when a prospective user wishes to use a tangible or intangible resource is properly viewed as reciprocal. Professor Coase argued that the harms from nuisance—a property tort—are reciprocal.⁵⁸ In Coase’s view, the victims of (what the law classifies as) a nuisance might experience harm, but the perpetrator of the alleged nuisance would also experience harm from being forced to forgo the activity that results in a nuisance. That the harm is reciprocal does not mean it is symmetrical; one side may experience more harm than the other. But Coase’s point was that it may well be efficient to allow activities classified as nuisances—and, in a utilitarian sense, it would be more ethical to allow them rather than disallow them. One may question whether disputes over uses of intellectual property in particular are properly viewed as situations in which either side would be legitimately harmed if the dispute were not resolved in that side’s favor. I take up that objection below.⁵⁹

A. *Standard Law and Economics*

When a property dispute occurs, one way to approach the problem is to work backwards from the desired resolution to determine what incentives the law should give the parties to encourage them to reach the socially desirable outcome.⁶⁰ The ideal outcome varies based on the situation. Conflict can center on whether a use is allowed or on the terms of a potential agreement to allow the use. Sometimes, we want owners and users to negotiate a license. Other times, we want the user to engage in the use without negotiation. Still other times, we want the user to be deterred from engaging in a use without negotiation. We also want the law to be sufficiently flexible such that, when the background policy is mistaken or simply inappropriate in that particular instance, parties pushed toward an inefficient outcome can reach the efficient outcome instead. Therefore, it is important to set the default rules properly. We want to allocate property rights to encourage an agreement, but we also must be prepared to live with the default rule if parties do not reach such an agreement.

1. Modeling Property Disputes

Start with the simplest case and the strongest assumptions. Assume perfect information, no externalities, no transaction costs, and no value on control independent of compensation. Suppose the property owner expects a future profit of 100 units if the disputed use does not occur. And assume

58. R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 2 (1960).

59. See *infra* Section II.C.2.

60. See, e.g., ROBERT GIBBONS, *GAME THEORY FOR APPLIED ECONOMISTS* 57–61 (1992) (explaining the methodology of backward induction).

that the owner expects that the profit will drop to 50 units if the use does occur.⁶¹

Now suppose that the user's product will not exist if the user cannot use the owner's property. If the user can generate 60 units in expected profits by engaging in the disputed use, the use is socially efficient. The owner's lost profits of 50 units are more than accounted for by the user's new profits. If the user can generate only 40 units in expected profits, however, it is not socially efficient.

The assumption of no externalities means that we can focus only on the profits of each party as an isolated dyad. Among other things, this means that there is no difference in consumer surplus between outcomes. The consumer surplus that the potential customers of each party would experience is external to the party's decisions.⁶²

The assumption of no transaction costs means that the parties can achieve the efficient result through a private transaction.⁶³ The assignment of rights affects the distribution of wealth, but the parties will bargain to the efficient result.⁶⁴ For example, suppose the entitlement goes to the user, but the use is worth only 40 units. The owner will pay between 40 and 50 units to block the use. How the parties split the surplus depends on one's assumptions about the bargaining process, but with no transaction costs the deal happens.

61. This does not deal with situations in which the drop renders the owner's investment in the property unprofitable overall, that is, situations in which the owner's fixed costs of investment would not be recouped. By assumption, then, the property owner in the example would still invest in using the property productively. But if that profit stream were instead negative, the owner would not. See Jerry R. Green & Suzanne Scotchmer, *On the Division of Profit in Sequential Innovation*, 26 RAND J. ECON. 20, 22–25 (1995) (modeling this type of inefficiency). For purposes of this Article, I leave this complication aside.

62. See Brett M. Frischmann & Mark A. Lemley, *Spillovers*, 107 COLUM. L. REV. 257, 273–74 (2007) (explaining that consumer surplus is external to contracts between intellectual property owners and users). Note that consumer surplus is *not* an externality—and is in fact very much internal—to the sales transactions between owners and their consumers or between users and their consumers.

63. The concept of efficiency that applies consistently in the standard law-and-economics model is Kaldor–Hicks efficiency. See RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 14–17 (9th ed. 2014) (defining Kaldor–Hicks efficiency as maximizing wealth across parties). Under the stated assumptions, the resource will go to the party that values it most. Thus, the result maximizes wealth among the parties. The allocation may also be Pareto efficient, but this depends on the particular circumstances—that is, each party's initial and final allocation. See *id.* at 14 (“A Pareto-superior transaction (or ‘Pareto improvement’) is one that makes at least one person better off and no one worse off.”).

64. Coase presented this insight in the context of nuisance law. See Coase, *supra* note 58, at 10 (“With costless market transactions, the decision of the courts concerning liability for damage would be without effect on the allocation of resources.”). His ultimate project was to analyze situations with costly transactions. See *id.* at 15.

2. Transaction Costs

Now add a simple transaction cost to account for the time, effort, and resources necessary to engage in bargaining. There is still no private information, externalities, or idiosyncratic value of control.

Under these circumstances, the worry arises that bargaining will not occur. It matters a lot who gets the initial entitlement, since the entitlement is more likely to stay with that party, even when it would be efficient for the resource to change hands. Adding transaction costs to the model means liability rules may have appeal in certain contexts.

Calabresi and Melamed's analysis, especially as later explicated by Professors Krier and Schwab, suggests that dealing with this problem requires determining which institution will be better at assessing the relative valuations—the government or “the market” (that is, the two private parties: the owner and the user).⁶⁵ This kind of comparative institutional analysis serves as a central tool of law and economics.

Now suppose that the parties know their own expected valuations under each outcome, but these valuations are not common knowledge. Moreover, suppose the government does not know the parties' valuations. There are still no externalities and no idiosyncratic value on control. Private information is a specific kind of transaction cost, with implications that can alter which property regime is optimal.

Scholars typically treat the private-information issue more as a problem of costly information: one could expend resources to acquire the information. But there is also a strategic problem with private information. Each party would have a strong incentive to overstate its own valuations in any negotiation.⁶⁶ Professors Ayres and Talley adopt a more game-theoretic perspective than the prior literature, asking what institutions can be used to induce parties to reveal information truthfully.⁶⁷ With private information, there is uncertainty for the parties and the government. To capture these groups' information and beliefs, policymakers can only posit a distribution of the valuations. In other words, policymakers will specify a range of possible valuations and place probabilities on each one.

It is helpful to reframe the parties' valuations in terms of the contested resource. We said before, with certainty, that the owner values non-use at 50 units (100 minus 50). Now suppose that the owner knows its own valuation, but others can perceive only that there is a distribution from 0 to 100 units,

65. A major transaction cost that concerns these authors is having multiple parties on one side of the dispute, which would generate coordination and holdout problems, as well as other problems. See Calabresi & Melamed, *supra* note 1, at 1119–22; Krier & Schwab, *supra* note 8, at 460–62. Those issues, however, are not the focus of this Article.

66. For an introduction to mechanism design, which deals with problems of truthful revelation of information, see ANDREU MAS-COLELL ET AL., MICROECONOMIC THEORY 857–83 (1995).

67. Ian Ayres & Eric Talley, *Solomonic Bargaining: Dividing a Legal Entitlement To Facilitate Coasean Trade*, 104 YALE L.J. 1027, 1039–47 (1995).

with equal probability on each value. (This is known as a uniform distribution.)

We said before that the user's valuation was either 40 or 60 units, but in either case it was known with certainty. Now we switch that to a distribution as well—also from 0 to 100 units, with equal probability on each value.

Making these assumptions, Ayres and Talley show that untailored liability rules could be efficient because they induce the entitlement holder (although not the nonholder) to reveal whether her valuation is more or less than the governmentally determined amount of damages.⁶⁸ With other kinds of transaction costs, the authors acknowledge, property rules could still be efficient. But liability rules can address the private-information problem in a way that property rules cannot.

Once there is private information (and resulting uncertainty about parties' valuations), there is no guarantee that policy will achieve the efficient outcome in every instance. Bargaining remains possible if the initial allocation is wrong, but that might not succeed either.

3. Externalities

Finally, suppose externalities are possible. Some externalities are reciprocal between the parties. Consider, for example, the law of nuisance. The baker's machinery disrupts the neighboring psychologist's sessions; the psychologist's need for quiet disrupts the baking process.⁶⁹ As Coase's analysis makes clear, the possibility of bargaining between the parties represents an opportunity for the externality to be internalized by a market transaction.⁷⁰ Under the right circumstances, each party will decide what to do while being cognizant of the external cost her behavior exacts on the other party.

If one looks outside of the two parties, however, other externalities can exist as well. For example, the baker's customers and the psychologist's clients could each be affected by the resolution of the nuisance dispute. This is a perfectly common state of affairs with respect to intellectual property disputes as well.⁷¹

The model of property disputes can be modified to allow for externalities. Returning to the numerical example above, the owner faces a potential drop in profits from 100 to 50 units if the user manages to use the property. That loss of 50 units does not take into account the lost consumer surplus that the owner's customers would have experienced absent the disputed use. For example, the psychologist's clients might be deterred by the noise and stay home, thereby losing the consumer surplus they would have gained from paying the psychologist for his services. Even if the owner and the user bargain, their decisionmaking will not take into account the positive externality that the owner's customers would experience in the form of consumer

68. *Id.*

69. See, e.g., *Sturges v. Bridgman*, [1879] 11 Ch.D. 852 (Eng.).

70. Coase, *supra* note 58, at 9.

71. See Frischmann & Lemley, *supra* note 62, at 271–75.

surplus. Similarly, the potential customers of the user's products face the same problem; the positive externality they experience from the user's products would not be internalized.⁷²

Of course, the owner's and the user's customers are not the only third parties potentially harmed by the resolution of the dispute. People value many things that they do not purchase, such as natural phenomena, wildlife, and so on. Intangible goods in particular may hold value because of their role in innovation, human knowledge, and cultural progress. Either the owner's property or the user's activity may have larger externalities of this sort. Calabresi and Melamed noted that this type of externality might capture some of what people consider the justice or fairness aspects of property disputes.⁷³

Policymakers might not have good information about the nature and relative weight of the externalities on either side of a dispute. But if they do, information about externalities could affect the initial entitlement and mode used to protect that entitlement. For example, in *Boomer v. Atlantic Cement Co.*, the court was cognizant that the employees of Atlantic Cement, their families, and the local region benefited from the plant's existence.⁷⁴ A decision that shut the plant down, in terms of the two-party, reciprocal-harm model, would have been a negative externality for the community.⁷⁵ In short, externalities can tip the scales for policymakers from one property regime to another.

At this point it is useful to take stock. This Section began with a situation of reciprocal harm. With no transaction costs, no private information, and no externalities, both social planning and private bargaining achieve the efficient result. Any of Calabresi and Melamed's four rules would produce the same outcome in terms of who acts and who refrains. The only difference is in the distribution of wealth. Adding transaction costs to the mix produces a situation in which the legal rule can matter a great deal. Considering private information and externalities can also generate a preference for one rule or another depending on the factual situation.

B. *Incorporating the Value of Control*

Any model, even one that lawyers and economists have developed over five decades, simplifies reality. The trick of theoretical work is to simplify in the most elegant, parsimonious, and useful way possible.⁷⁶ Some dimensions

72. Also, to the extent that enforcement is imperfect, there will be social value lost for those who enjoy the leakage, that is, the free uses.

73. Calabresi & Melamed, *supra* note 1, at 1102–05.

74. 257 N.E.2d 870, 873 n.* (N.Y. 1970).

75. Of course, negative externalities could exist on the other side, stemming from the fact that the plaintiffs received only damages. Those families and others might choose to move away, for example. The court may have felt that these negative externalities would be less, in total, than the negative externalities from shutting down the plant.

76. See POSNER, *supra* note 63, at 17–19.

of real-world situations are necessary to a good model, while other dimensions are extraneous. A key argument of this Article is that the standard law-and-economics model leaves out an important real-world feature of property disputes: the subjective value of control for its own sake. Adding this dimension to the model will provide better theoretical insight into property disputes. More importantly, it will reveal a broader set of policy options and generate useful prescriptions for policymakers.

This Section augments the standard law-and-economics model of property disputes by providing a formal representation of the value of control. To the standard model, this Section adds the idea of a two-dimensional space for goods: (1) compensation and (2) control in and of itself. Economic analysis is not the only way to develop a theory of property disputes that recognizes the separate value of autonomy. But in this Article, my aim is to show that the economics of law can accommodate recognition of autonomy's value.

Parties to disputes over property, including intellectual property, may care about control in and of itself.⁷⁷ One might wonder whether the value of control could simply be folded into monetary value. Indeed, economic analysis assumes (and sometimes asserts)⁷⁸ that all goods are commensurable. This Section will show that it is possible to account for the value of control in numerical examples, such as the example involving the property owner and the potential user that the previous Section explored.

1. Utility over Compensation and Control

This Section takes a utility-function approach to illustrate how individuals' preferences could reflect the value of compensation and the value of control.⁷⁹ But some caveats are in order. Utility functions are, of course, abstractions. They need not reflect individuals' conscious decisionmaking processes.⁸⁰ Rather, these models are designed to capture a way in which individuals might behave if they were adhering to the prescriptions of a mathematical function. Utility functions also leave out countless features of reality in order to focus on a few key variables and better understand the interactions among them.

The utility-function approach embeds both a utilitarian philosophy and a rational-choice psychology.⁸¹ There are good reasons to question or even

77. One interesting issue is whether anticipation or regret affects individuals' valuation of control. Do people care more about control before they have it, when they have it, or after they have lost it? Or do people value control at the same level, regardless of their situation?

78. See Louis Kaplow & Steven Shavell, *Fairness Versus Welfare*, 114 HARV. L. REV. 961 (2001) (defending a solely utilitarian approach to legal policies).

79. For a textbook description of utility-function approaches, see HAL R. VARIAN, *MICROECONOMIC ANALYSIS* 94–98 (3d ed. 1992).

80. See MAS-COLELL ET AL., *supra* note 66, at 11–14 (explaining the theory of revealed preference).

81. See DANIEL M. HAUSMAN & MICHAEL S. MCPHERSON, *ECONOMIC ANALYSIS, MORAL PHILOSOPHY, AND PUBLIC POLICY* 45–55 (2d ed. 2006).

reject both of these value systems.⁸² But even the critics of utilitarianism generally consider utility as at least relevant to the ethical frameworks that they find preferable.⁸³ And many behavioral economists have used the rational-choice model as a starting point from which to measure the deviations that arise in actual human behavior.⁸⁴ Despite the limits of utilitarianism, then, utility functions can tell us something interesting and keenly relevant to property disputes.

In keeping with the core distinction of this Article, I will model compensation and control as two separate goods over which parties to property disputes have preferences.

The first good, which I call compensation, refers to enjoyment or money.⁸⁵ It is a flexible good that provides utility in terms of consumption and savings. One can think about compensation in terms of the total amount of enjoyment and money that property will generate over an infinite time horizon or, alternatively, over some finite period. But one can also think about the benefits that are generated from licensing a specific use by another party.

The second good, control, refers to the ability to dictate whether a particular use occurs. Control might generate positive utility, and a lack of control might generate negative utility.⁸⁶ As with compensation, one can think of control over a long period or in terms of specific uses. Quantifying control can be handled in two ways as well. Control could be discrete: either one has control or one does not. Control could also be modeled as a continuous variable. For instance, an owner might have control over 70% of the possible uses of the property in question. To the extent that the owner gets increasing utility from control, she prefers having 80% control to 70%, and she prefers 70% to 60%.

Some readers might object by pointing out that compensation and control are commensurable. In other words, at the right price, a rights holder might accept any use by any other person, even if that use offends her. This argument may well be correct. But the commensurability of any two goods—say, apples and oranges—does not imply that one cannot consider the joint demand for apples and oranges.⁸⁷ Furthermore, even if compensation and control are commensurable, the laws of property and intellectual

82. See *id.* at 55–59, 112.

83. See generally ELIZABETH ANDERSON, *VALUE IN ETHICS AND ECONOMICS* (1993) (developing an expressive theory of value that both critiques and takes careful account of economic concerns).

84. See, e.g., Vernon L. Smith, *Rational Choice: The Contrast Between Economics and Psychology*, 99 J. POL. ECON. 877, 877–78 (1991).

85. See *supra* notes 12–13 and accompanying text.

86. The value of control need not be positive. For some individuals or in some circumstances, possessing decisionmaking authority could be undesirable and burdensome, and the lack of such authority could provide joy. In this Article, however, I will assume that the value of control is positive.

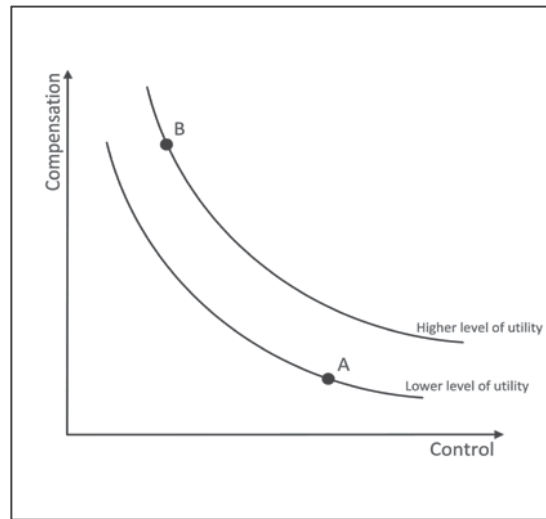
87. See, e.g., VARIAN, *supra* note 79, at 97–102 (demonstrating that utility functions can model the substitution between two commensurable goods).

property operate along both dimensions. Calabresi and Melamed's four rules each endow either the owner or the user with compensation, control, or both.⁸⁸

So far, I have identified two goods, the amounts of which can vary. The set of possible amounts of compensation and control can be depicted in a two-dimensional space, with compensation on the y-axis and control on the x-axis. Each coordinate pair might be a lifetime allocation of entitlements or the outcome of a single transaction. One way to think about a hypothetical owner's or user's preferences within this space of outcomes is to ask the following question: How much compensation and how much control are necessary to give that party a certain level of utility? An individual might have preferences such that many combinations provide equal utility. These combinations trace out what economists call an indifference curve, because the individual is indifferent between any two combinations that fall among the same curve.⁸⁹

Figure 1 is an example of a pair of indifference curves. Imagine that Points A and B represent two different allocations of the two goods (compensation and control) that the legal system could instantiate.

FIGURE 1.
INDIFFERENCE CURVES IN COMPENSATION-CONTROL SPACE



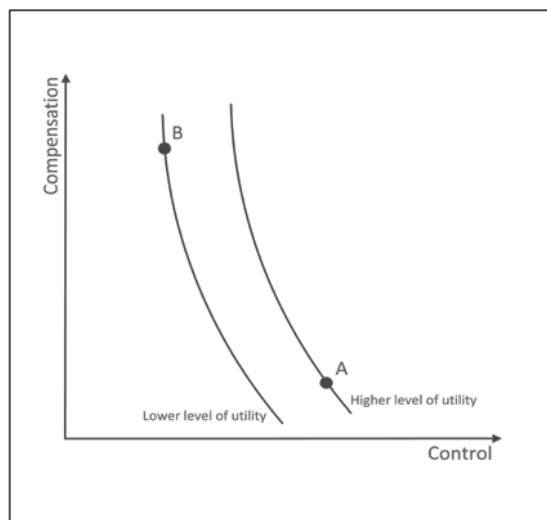
In Figure 1, the upper indifference curve provides the individual with a higher level of utility than the lower indifference curve. Together, the curves display information about preferences across certain coordinate pairs. Comparing Point A to Point B, one can see that Point A provides a relatively greater level of control but less compensation. Because Point B resides on a

88. See *supra* Section I.B.

89. See, e.g., VARIAN, *supra* note 79, at 100.

higher indifference curve (that is, an indifference curve corresponding to a higher level of utility for the owner), we can say based on Figure 1 that the owner in question prefers Point B to Point A. This corresponds to the idea that such an individual would prefer Rule Two to Rule Four—she would prefer a statutory license protecting her entitlement to a reverse statutory license protecting an entitlement that the other party holds.

FIGURE 2.
DIFFERENTLY SHAPED INDIFFERENCE CURVES
FLIP THE PREFERENCE



In Figure 2, by contrast, the preference flips. The property owner with these indifference curves prefers Point A to Point B. The owner prefers a higher level of control and a lower level of compensation (in relative terms) to a lower level of control and a higher level of compensation, at least for the situations depicted in the figure. This aligns with the notion of preferring Rule Four to Rule Two—preferring a “reverse liability rule” to being subject to a statutory license.

Finally, it is worth noting that Points A and B could exist on the same indifference curve. In that event, the owner would have no preference between Rule Two and Rule Four.

We can also model users as having utility functions over compensation and control. Here, the compensation dimension is capturing how much the user has to pay. The control dimension for users is analogous to the control dimension for owners. Users’ preferences over Point A and Point B could go either way, depending on their utility functions and the shape of the corresponding indifference curves.

The utility-function analysis provides a new perspective on the standard framework for thinking about property rights and entitlements. We cannot say a priori that owners or users always have preferences that look like the

preferences in Figure 1. On the contrary, it is quite possible that some actors in the system might have preferences as depicted in Figure 2.

2. Disaggregating Harm

Proceeding from the premise that individuals have utility over both compensation and control, we can now augment the standard analysis of two-person property disputes. The first step is to disaggregate the harm that each party experiences. We can distinguish between two categories of harm: harm based on the outcome versus harm based on the process.

Harm based on outcome is entirely familiar to the standard law-and-economics analysis.⁹⁰ It represents the financial harm to each party's projects that results from the opposing party's use. For example, a neighboring nuisance could lower a property's market value.⁹¹ Harm based on outcome also encompasses the satisfaction a party loses when she is unable to engage in her preferred use. For instance, a would-be user of a new technology may experience a subjective, personal loss if she cannot use a patented invention.⁹² Finally, harm based on outcome includes the personal dissatisfaction that a party experiences when the opposing use occurs. For example, a singer-songwriter might experience distress if another recording artist covers one of his songs in a way he finds offensive.⁹³ Thus, harm based on outcome can be objective (that is, measurable in a market) or subjective.

Harm based on process, by contrast, serves as a new component in the model of property disputes. It represents the value each party places on control—on having the power to make the decision whether the use occurs. Part of the harm that stems from lacking the entitlement to prevent or engage in a particular use is the subjective dissatisfaction from lacking control. If a party values control to some extent—if she has a preference for a particular process or pathway toward achieving an outcome, and not just a preference for that outcome—the analysis of entitlements, property rules, and liability rules should take this value into account.

Returning to the numerical example,⁹⁴ recall that the owner experienced harm of 50 units (a drop from 100 to 50) as a result of the user's prospective activity. I suggest disaggregating these 50 units of harm into two categories.

90. See Fennell, *supra* note 7, at 963–66 (discussing personal enjoyment and returns from trade, which are outcome based, as part of subjective value).

91. See, e.g., *Burch v. NedPower Mount Storm, LLC*, 647 S.E.2d 879, 885 (W. Va. 2007) (reversing dismissal of a nuisance claim alleging that a “wind power facility will cause a reduction in the appellants’ property values”).

92. See Ann Bartow, *Inventors of the World, Unite! A Call for Collective Action by Employee Inventors*, 37 SANTA CLARA L. REV. 673, 699–700 (1997) (stating that employee inventors who lack the right to practice their inventions “may be thereafter personally frustrated and unfulfilled”).

93. See, e.g., Jane Fryer, *Haunted by His Greatest Hit*, MAIL ONLINE (Jan. 5, 2011, 8:36 PM), <http://www.dailymail.co.uk/news/article-1344534/Baker-Street-rich-dreams-plunged-Gerry-Rafferty-drunken-self-destruction.html> (quoting Gerry Rafferty describing a dance remix of his most successful song as “‘dreadful, totally banal—it’s a sad sign of the times’”).

94. See *supra* Sections II.A.1–2.

Suppose the objective market harm from the opposing use and the subjective dissatisfaction from witnessing the opposing use add up to 40 units. The remaining 10 units of harm represent the value of control. In other words, to be willing to cede the power to make the decision about the contested use, the owner would require compensation of at least 10 units. The owner has some degree of preference for calling the shots.

One can acknowledge the value of control without departing from the utilitarian framework of standard economics. In fact, the utility-function approach assumes that the value of control can be converted into dollar terms. Moreover, this analysis still takes as given the parties' preferences—the value they each place on control—rather than speculating as to whether one preference is more or less valid.

Different legal rules—like assigning property rights to one party or another or choosing a property rule instead of a liability rule—instantiate different processes for resolving disputes. This Article's contribution is to recognize that these processes then become endogenous to the parties' experience of the world. In other words, the processes themselves are goods that each individual will value differently. Since the law allocates this power, it makes sense for lawyers, economists, and policymakers to incorporate the value of control into their thinking about assigning property rights.

3. Ranking the Initial Endowments Under Each Rule

Incorporating the value of control into the model of property disputes reveals a surprising possibility about parties' views of Rule Two and Rule Four, the two liability rules.⁹⁵ Normally, one would assume that having an entitlement is preferable to lacking one. Conventional wisdom therefore holds that the owner would prefer Rule Two to Rule Four, and the user would prefer Rule Four to Rule Two. Calabresi and Melamed themselves referred to the entitlement decision as primary, leaving the policy decision about the method of protection as secondary.⁹⁶ This led commentators to suggest that having the entitlement is always preferable for any individual.⁹⁷ But such a view assumes a one-dimensional, solely monetary mode of valuing property rights. Once we adopt a two-dimensional framework for value and incorporate the value of control, we see that the assumed preferences for Rule Two and Rule Four can flip.

The numerical example can illustrate the point. Suppose the owner values at 100 units full property-rule protection, which includes the power to block uses *and* the power to demand her subjective price to transfer the entitlement. This value is equivalent to the initial endowment that the owner

95. For definitions of the rules, see *supra* Section I.B.

96. See Calabresi & Melamed, *supra* note 1, at 1090.

97. See, e.g., POSNER, *supra* note 63, at 92–94 (discussing the distributive effects of property regimes with the implicit assumption that having the entitlement is preferable).

would receive if policymakers chose Rule One.⁹⁸ The owner remains perfectly free to sell the entitlement, but, if she is a rational economic actor, she will gain from any trade. Thus, 100 units is merely her starting point—that is, the amount of resources that the legal system gives her to start with.

In the example, the user's activity would impose 50 units of harm on the owner. The owner's remaining 50 units of value are equivalent to the initial endowment that the owner would receive if policymakers chose Rule Three instead.⁹⁹ Again, the owner may be able to make a deal; here, the deal would be to improve her lot by purchasing the entitlement from the user. But the owner's starting point is 50 units. Thus, we can think of the quantum of harm—the 50 units the owner stands to lose in the dispute—as the gap between the initial values of Rule One and Rule Three from the owner's perspective. An analogous, reversed calculation could be done from the user's perspective.

We next determine how to value the initial endowments under Rule Two and Rule Four. Consider Rule Two first. Under the standard law-and-economics analysis, one would say that Rule Two endows the owner with 100 units of value—subject to the user's option to engage in the use for a governmentally determined fee.¹⁰⁰ Valuing the option would depend on assumptions about the user's preferences, the level of the fee, and the administrative costs of exercising the option, among other things. But the base endowment would be 100 units—if the status quo holds, then the owner would avoid any harm and would be as well off as she is under Rule One.

Incorporating the value of control changes this analysis. The 50 units of potential harm to the owner are disaggregated into 40 units of outcome-based harm and 10 units of process-based harm.¹⁰¹ Rule One endows the owner with both categories of value—the full 50 units of potential harm—for a total endowment of 100 units. But Rule Two endows the owner with only the value of the outcome-based harm—40 units, in this example—that the entitlement allows her to avoid as an initial matter. By contrast, Rule Two denies the owner the value of control, that is, the value of decisionmaking power. The owner's entitlement is subject to an option, and she knows that she cannot stop the user from exercising that option. Regardless of the outcome—regardless of whether the user actually exercises the option—the owner never receives those 10 units of value. Thus, we would say that the owner's initial endowment is worth 90 units under Rule Two.

We can do the converse analysis to calculate the owner's endowment under Rule Four. The standard law-and-economics analysis would put the

98. Rule One means the owner has the entitlement, protected by a property rule, which gives the owner both compensation and control. *See supra* text accompanying note 40.

99. Rule Three means the user has the entitlement, protected by a property rule. *See supra* text accompanying note 40.

100. In this way, liability rules operate like “call” options. *See Ayres & Goldbart, supra* note 47, at 4–5. In this Article, I leave aside property regimes designed like “put” options.

101. *See supra* text accompanying note 94.

endowment at 50 units under that rule, plus the value of the option to block use that the owner possesses under that regime. But recognizing the value of control suggests that Rule Four gives the owner more than that. Under Rule Four, the owner is the decisionmaker, regardless of whether she ultimately exercises her option to block. Thus, the 10 units of value she places on control are part of her endowment under Rule Four, giving her an initial endowment of 60 units.

In this example, the owner would still rank the rules in the same order as she would in the traditional law-and-economics analysis.¹⁰² Rule One is preferable to Rule Two (because $100 > 90$), Rule Two is preferable to Rule Four (because $90 > 60$), and Rule Four is preferable to Rule Three (because $60 > 50$). This preference ordering flows from the 10 units of value that the owner places on control. The analogous ranking could be calculated from the user's perspective, based on the harm the user would experience from being blocked and her own subjective value of control.

Now consider what would happen if the owner places an even higher value on control. Suppose the value of control was 30 units instead of 10 units (while keeping the total harm fixed at 50 units). This would change the initial value of Rule Two to 70 units: the difference between 100 (the value of Rule One, which includes the value of control) and 30 (the value of control). Meanwhile, the initial value of Rule Four would become 80 units: the sum of 50 (the value of Rule Three) and 30 (the value of control).

If the owner places a higher value on having control, the ranking of rules changes. Rule Four becomes preferable to Rule Two (because $80 > 70$). Some individuals may have a strong preference for controlling the process—that is, for being the decisionmaker. If this preference is strong enough, Rule Four becomes more attractive than Rule Two from the owner's perspective. In general, the owner's preference over initial endowments depends precisely on whether the value of control is more or less than half the total harm.¹⁰³ The owner may prefer not to have the entitlement if the entitlement would be protected merely by a liability rule. Similarly, Rule Two could become more attractive to the user than Rule Four, for completely analogous reasons.

102. See *infra* Sections II.B.4–5.

103. In comparing the initial endowments, the owner is comparing the Rule One (best possible) outcome, minus the value of control, to the Rule Three (worst possible) outcome, plus the value of control. Add the value of control to both sides—this leaves a comparison between the Rule One outcome on the left-hand side and the Rule Three outcome, plus two times the value of control, on the right-hand side. Subtract the Rule Three outcome from both sides—this leaves a comparison between the total harm (the Rule One outcome minus the Rule Three outcome) and two times the value of control. Divide both sides by two. The right-hand side is larger, and Rule Two's initial endowment is preferred, if the total harm divided by two is greater than the value of control. Conversely, the left-hand side is larger, and Rule Four's initial endowment is preferred, if the value of control is greater than the total harm divided by two.

So far, I have demonstrated only the parties' preferences with respect to the initial valuations of each rule; I next consider how the value of the options affects parties' preferences for Rule Two or Rule Four.

4. Four Scenarios

Rule Two gives the user an option to engage in the contested use as she wishes. Exercising the option requires payment of a governmentally determined fee. Conversely, Rule Four gives the owner an option to block the use and similarly requires payment of a governmentally determined fee to exercise it. Each option presents two possibilities: either the possessor of the option exercises it or she does not.

I will call the governmentally determined fee under Rule Two f_2 , and I will call the fee under Rule Four f_4 .¹⁰⁴ This notation will distinguish the two fees and recognize that they may differ, perhaps substantially.¹⁰⁵ We will also assume for simplicity of exposition that there are no administrative costs.¹⁰⁶ For now, we are simply taking f_2 and f_4 as given—something determined by the government in a black box.

Making the assumption that individuals maximize their utility, one can specify the conditions under which individuals would exercise their options.¹⁰⁷ The user would exercise her option under Rule Two as long as the outcome-based harm she would experience from not engaging in the use is greater than f_2 . The user's outcome-based harm is simply the total harm that the user would experience from not being free to engage in the use, minus the value of control. Similarly, the owner would exercise her option under Rule Four whenever the outcome-based harm she would experience from enduring the use exceeds f_4 . The owner's outcome-based harm is the total harm that the owner would experience if the use occurred, minus the value of control.

To compare the policies of Rule Two and Rule Four, then, we must consider four scenarios: (1) neither the user nor the owner would exercise her option if it were granted to her; (2) the user would exercise her option under Rule Two, but the owner would not exercise her option under Rule Four; (3) the user would not exercise her option under Rule Two, but the owner would exercise her option under Rule Four; and (4) both the user and the owner would exercise their options if granted.

104. In scientific writing, one would ordinarily render f_2 and f_4 using subscripts. But for purposes of this Article, I have found that " f_2 " and " f_4 " are easier for readers to distinguish.

105. I will assume that the fees are strictly greater than zero. Otherwise, when $f_2 = 0$, Rule Two and Rule Three would be equivalent. Similarly, when $f_4 = 0$, Rule Four and Rule One would be equivalent.

106. Greater administrative costs would make the liability rules less socially appealing relative to the property rules. More relevant to my purposes here, administrative costs would increase the total cost to either party of exercising an option under Rule Two or Rule Four. My argument in this Section is robust to adding administrative costs to the model, but such a change would make the core result harder to see.

107. See VARIAN, *supra* note 79, at 98–102 (explaining utility maximization).

In any of these four scenarios, depending on the details of the situation, the owner could prefer Rule Four to Rule Two—that is, she could prefer having decisionmaking power to having the entitlement. Analogously, the user could prefer Rule Two to Rule Four in each of the four scenarios. Why does this matter? First, it shows the importance of taking into account the value of control; this value can reverse individuals' policy preferences. Second, it suggests that Rule Four may have more applicability than currently appreciated.¹⁰⁸ And third, it opens up several new policy possibilities discussed below.¹⁰⁹

5. Conditions Under Which Owners Prefer Rule Four to Rule Two

Using our numerical example, I will now consider each of the four scenarios in turn and describe the conditions under which an owner could prefer Rule Four to Rule Two. The converse results would follow analogously for users.

a. *Neither Would Exercise*

In this scenario, neither party would exercise the option if she had it. This means that, under Rule Two, the user would decide that f_2 is too great a price to pay to engage in the use. Similarly, under Rule Four, the owner would decide that f_4 is too great a price to block the use.

The ultimate outcome for the owner in this scenario is the same as her initial entitlement under whichever rule is chosen. Thus, her preference between Rule Two and Rule Four will be determined in the same way as before.¹¹⁰ In our numerical example, we specified that the owner faced potential harm of 50 units. Under Rule Two, the owner receives an endowment of 100 units minus the value of control. Under Rule Four, by contrast, the owner receives an endowment of 50 units plus the value of control. She will prefer Rule Four to Rule Two whenever the value of control is greater than 25 units.¹¹¹

b. *Only the User Would Exercise*

In this scenario, f_2 is low enough such that the user would exercise her option if Rule Two were the chosen property regime. The owner, however, would not exercise her option under Rule Four, because f_4 is greater than the outcome-based part of the harm she faces.

Thus, to compare Rule Two and Rule Four, we must compare the owner's outcome under Rule Two after the user has exercised her option

108. See *infra* Sections II.B.5, III.A.

109. See *infra* Part IV.

110. See *supra* text accompanying notes 100–103.

111. See *supra* note 103 and accompanying text (explaining that the owner prefers Rule Four whenever the value of control exceeds half the total harm).

with the owner's initial endowment under Rule Four. (The latter would remain unchanged because the owner would decline to exercise her option.) Using the numbers in our example, the owner's outcome under Rule Two is 50 units plus f_2 : even though the full harm is inflicted upon her, she is compensated with the governmentally determined fee. Under Rule Four, the outcome is 50 units plus the value of control. Thus, in this scenario, the owner will prefer Rule Four to Rule Two whenever the process-based harm exceeds f_2 .

c. *Only the Owner Would Exercise*

This scenario is the opposite of the preceding one. The owner would exercise her option to block under Rule Four, but the user would decline to exercise her option to use under Rule Two. We can compare these outcomes from the owner's perspective using our numerical example. Under Rule Two, her outcome is 100 units minus the value of control. This is her initial endowment under the rule, which (in this scenario) is left unchanged because the user would decline to exercise her option. Under Rule Four, the owner's outcome, if she chooses to block, is 100 units minus f_4 , the governmentally determined fee.

In this scenario, then, the owner will prefer Rule Four to Rule Two whenever the process-based harm exceeds f_4 . Just as in the second scenario, the owner prefers Rule Four if she places a higher value on control than she does on the amount of compensation required to block the disputed use. But here, the owner must decide whether to pay to exercise an option or to accept a loss of control.

d. *Both Would Exercise*

In this final scenario, we assume that each party would exercise her option if granted it. From the owner's perspective, the comparison is between 50 units plus f_2 (the Rule Two outcome) and 100 units minus f_4 (the Rule Four outcome).

The Rule Four outcome will be preferable whenever the owner's total harm exceeds the sum of f_2 and f_4 .¹¹² The owner will tend to like Rule Four better: the greater the harm she faces, the cheaper it is to exercise her option under Rule Four and the less appealing it is to accept compensation under Rule Two. Thus, even when the value of control does not play a role, owners might prefer Rule Four.

As the previous three scenarios show, however, taking into account the value of control is often highly relevant. To identify all the situations in

112. The algebra works as follows. Start with the inequality that is required for Rule Four's outcome to be greater than Rule Two's. This is $100 - f_4 > 50 + f_2$. Add f_4 to both sides of the inequality. Subtract 50 from both sides. This leaves $(100 - 50) > f_2 + f_4$, or simply $50 > f_2 + f_4$. It is important to remain cognizant of what the number 50 in our example abstractly represents: the gap between the owner's best initial endowment (100) and her worst endowment (50), that is, the maximum potential harm to the owner.

which owners prefer Rule Four to Rule Two, it would be insufficient to consider only the governmentally set fees *f*₂ and *f*₄. Indeed, acknowledging the distinct value of control reveals a larger set of situations in which parties have counterintuitive preferences.

The analysis under all four scenarios can be reversed to generate the analogous conditions under which users would prefer Rule Two to Rule Four. The key point is that either party might value decisionmaking power over the right to receive compensation. This result flows from recognizing that individuals can derive utility from both compensation and control.

C. *Anticipating Critiques*

This Section responds to anticipated critiques of my theoretical approach.¹¹³ Some of the objections are specific to disputes over intellectual property, while others apply more generally to the economic analysis of property disputes and the specific approach taken in this Article.

1. Doubts About the Subjective Value of Control

I have assumed in this Article that the harms in property disputes include both objective market harm and subjective psychological harm.¹¹⁴ Subjective harm can arise from idiosyncratic party preferences or from misperceptions of existing law, which can make the subjective valuation seem suspect. For example, a songwriter previously unfamiliar with copyright law might have expected to decide who can record or perform her song. Consider, then, this songwriter's frustration upon learning that she cannot block a cover version of her musical work. Similarly, a user will be disappointed when she expects to use a work free and clear but then receives a valid takedown notice through YouTube. And a company will be just as disappointed when it buys patents later found to be invalid. In a sense, the harm lies in the gap between expectations and reality. Characterizing owners' and users' harm in this way may suggest to some observers that this is no harm at all—it is simply the result of strange preferences or even a mistake.

Yet policymakers must settle disputes in which parties have subjective valuations, regardless of the source of those valuations. Just because someone *should not* feel harmed does not mean that she *does not* feel harmed. After all, all harms are subjective in one way or another; the point of analyzing subjective harm is to account for the idiosyncrasies.

Moreover, making a mistake of law does not render illegitimate the corresponding normative position—that is, the position that the law should be as I mistakenly think it is. To the extent that property law has adopted a position that gives an advantage to owners or users, a plausible argument probably exists for the opposite position.

113. For a discussion of concerns about the practical implementation of Rule Four, see *infra* Section III.A.

114. See *supra* text accompanying notes 2–7.

2. Doubts About the Reciprocal Nature of Harm

Coase's theory of reciprocal harm for nuisance disputes seems directly applicable to intellectual property disputes.¹¹⁵ But one must be careful about making the leap from real property to intellectual property; there are similarities and differences.¹¹⁶ In economic terms, intangible goods have the character of public goods.¹¹⁷ First, intangible goods are nonrival, at least to some degree—for example, one person's knowing the details of an invention does not prevent another person from knowing that same information. Second, it is difficult to exclude people from enjoying or possessing intangible goods. Nonrivalry makes it seem, at least to some observers, that there is little or no harm from unauthorized uses of intellectual property.¹¹⁸ Meanwhile, the difficulty of exclusion has led some to argue that preventing unauthorized uses is overly expensive or futile.¹¹⁹ Those holding this view might reject any claim of reciprocal harm in the intellectual property context because they do not believe that unauthorized use truly harms owners.

On the other side, proponents of expansive intellectual property protection often argue that such protection causes no harm to putative users because substitutes are available.¹²⁰ If intellectual property protection makes goods more expensive, consumers deterred from purchasing the goods could choose to buy something else. For example, downstream creators deterred from purchasing a license to use intellectual property could redesign their creation with another component or simply produce a different product altogether. According to this view, the harm in these situations is marginal at most, and sometimes even nonexistent.

These arguments against the reciprocal nature of harm are really arguments against accounting for subjective valuation in another guise. Regardless of the optimal strength of intellectual property protections, a theory that aims to resolve intellectual property disputes should recognize the subjective harm that both owners and users might experience upon losing a property dispute.

115. See *supra* text accompanying notes 58–59.

116. See *supra* note 11.

117. For a formal discussion of public goods, see MAS-COLELL ET AL., *supra* note 66, at 359–64.

118. See, e.g., John Perry Barlow, *The Economy of Ideas*, WIRED, Mar. 1994, at 84, available at <http://www.wired.com/wired/archive/2.03/economy.ideas.html>.

119. See, e.g., Peter K. Yu, *How the Motion Picture and Recording Industries Are Losing the Copyright War by Fighting Misdirected Battles*, FINDLAW (Aug. 15, 2002), http://writ.news.findlaw.com/commentary/20020815_yu.html.

120. See, e.g., David S. Olson, *First Amendment Based Copyright Misuse*, 52 WM. & MARY L. REV. 537, 585–86 (2010) (discussing the argument that intellectual property rights do not harm consumers through an exercise of market power).

3. Doubts About the Economic Analysis of Harm

One might object that property disputes require a more holistic ethical approach than economic analysis can offer. In their article, Calabresi and Melamed discuss situations in which morality dictates that an entitlement should be inalienable.¹²¹ For instance, it would be morally repugnant to view some harms, such as intentional torts or violent crime, as reciprocal. No matter how much utility an individual derives from murder, we should not allow that individual to commit such an act.

Intellectual property disputes illustrate this line of critique. Although such disputes do not usually involve violence, they can take on a contentious character—sometimes even leading the parties to use heated rhetoric suggesting that one party has been harmed to a degree tantamount to harm from violent crime.¹²² Moreover, moral-rights systems sometimes make particular rights inalienable, perhaps reflecting a judgment that granting users certain rights would be unconscionable.¹²³ Meanwhile, by reserving certain exceptions and limitations, intellectual property law often recognizes that users must have certain entitlements.¹²⁴ Some scholars and policymakers might therefore object that moral considerations should sometimes supersede economic analysis.

I think this is a valid concern. Economic analysis can and should be tempered in recognition of other ethical considerations.¹²⁵ Accordingly, the discussion below about the practical implementation of Rule Four acknowledges particular moral considerations, such as free-speech values, that limit the scope of the property regime.¹²⁶

4. Doubts About the Separate Value of Control

I have augmented the standard law-and-economics approach to property disputes by assuming that actors place a value on control that is separate from the value they place on the substantive outcome. One might question the appropriateness of this assumption. It is true that economics focuses on outcomes. For instance, the classical analysis of supply and demand is a story about equilibrium—about the happy endpoint that society reaches when a market operates.¹²⁷ Valuing control, however, would also consider how parties experience the process of reaching equilibrium.

121. Calabresi & Melamed, *supra* note 1, at 1111–15.

122. See Litman, *supra* note 22, at 1903 (quoting then–Motion Picture Association of America Chairman Valenti’s comparison of the VCR to the Boston Strangler).

123. See Kwall, *supra* note 17.

124. See Netanel, *supra* note 32, at 1086.

125. See *supra* notes 81–83 and accompanying text.

126. See *infra* Section III.B.4.

127. See VARIAN, *supra* note 79, at 219. Economists have generally been less concerned with, and less able to analyze, the process of reaching equilibrium. My microeconomics professor in graduate school referred to this silence on the process of reaching equilibrium as the “soft underbelly” of economics. See MAS-COLELL ET AL., *supra* note 66, at 620 (discussing the

It may seem unorthodox to account for individuals' preferences about process. But this approach does not require abandoning a utilitarian framework. Instead, it provides a way to incorporate the kinds of values that nonutilitarians care about—such as justice, fairness, and autonomy—into a utilitarian framework. Placing independent value on control takes advantage of the flexibility of utility analysis.

Moreover, even if valuing control seems unfamiliar, it is useful to push the conventional boundaries. Economic analysis of law, as an interdisciplinary methodology focused on law and policy, should incorporate process into the analysis. When the legal system allocates goods, individuals may care about how the goods came into their possession.¹²⁸ By accounting for these individuals' concerns, the model introduces a potential unfamiliarity that is not a weakness but rather a strength.

III. IMPLEMENTING THE MISSING RULE

This Article has outlined a new theory that explains how both liability rules—Rule Two and Rule Four—can be useful for policy. Yet Rule Four is rarely used with respect to real property, and it is barely considered with respect to intellectual property. Scholars traditionally rely on *Spur Industries, Inc. v. Del E. Webb Development Co.*¹²⁹ as an example that illustrates a practical application of Rule Four.¹³⁰ Insisting on the policy relevance of this rule puts one in the position of a physicist who has discovered one quantum particle (that is, Rule Two) but has yet to observe its implied opposite.¹³¹ In the context of one-on-one disputes between individuals or between individual entities,¹³² Rule Four remains unfamiliar.¹³³

This unfamiliarity calls for some discussion of how Rule Four would work in practice.¹³⁴ It also suggests some reasons why policymakers have not deployed the rule—reasons that will require institutional-design choices that mitigate the rule's drawbacks.¹³⁵ Still, declining to use Rule Four more often represents a missed opportunity. Using the full complement of Calabresi

discipline's focus on equilibrium and its relative inability to make headway in specifying dynamic processes).

128. See Daphna Lewinsohn-Zamir, *Taking Outcomes Seriously*, 2012 UTAH L. REV. 861, 902 (describing the importance of "how an outcome was brought about" to subjects in a psychological study).

129. 494 P.2d 700 (Ariz. 1972).

130. See Krier & Schwab, *supra* note 8, at 444–45.

131. See, e.g., Christina Scelsi, *Stopping the Collision: The Fight Over the Large Hadron Collider*, 5 SCITECH LAW. 8, 9 (2009) (describing quark pairs).

132. Professor Rose points out that Rule Four looks a lot like eminent domain, in which many similarly affected individuals are on the owner's side of the dispute. Carol M. Rose, *The Shadow of The Cathedral*, 106 YALE L.J. 2175, 2180 (1997). In that situation, the government is both setting up the regime and exercising the option on behalf of a group of citizens. *Id.*

133. See THOMAS W. MERRILL & HENRY E. SMITH, PROPERTY 99 (2010).

134. See *infra* Section III.A.

135. See *infra* Section III.B.

and Melamed's rules would help resolve disputes efficiently and fairly. Making use of Rule Four in policy experiments would also allow policymakers to learn more about the true preferences of parties engaged in property and intellectual property disputes.¹³⁶

A. *How Rule Four Could Work*

This Section explains how Rule Four—the reverse liability rule—would work in practice. When considering implementation, one must recognize that each of the four rules is really a category of rules.¹³⁷ Choosing one of the rules is only the first policy choice; many other dimensions of designing the property regime must be considered. This Section offers some thoughts on these choices.

1. Determining When to Deploy Rule Four

Suppose that a policymaker faces a dispute between a property owner and a would-be user of a certain part or aspect of the property. What normative considerations should the policymaker rely on when choosing a property regime?

Usually the analysis of property rules and liability rules proceeds from the perspective of a policymaker seeking efficiency or, more broadly, from the perspective of overall social welfare.¹³⁸ This focus on efficiency makes some sense. The point of property law and intellectual property law is not usually seen as distributional, that is, shifting wealth from one class of actors to another. Instead, property law is more suited to pursuing an efficient or balanced policy. In law-and-economics scholarship, there is a strong preference for focusing on efficiency—usually Kaldor–Hicks efficiency—rather than on distributional goals.¹³⁹

The model I have presented in this Article has concerned individuals' preferences rather than Kaldor–Hicks efficiency. My rationale is that society may have an interest in Pareto efficiency (that is, making sure each party is no worse off) in addition to Kaldor–Hicks efficiency.¹⁴⁰ Perhaps policymakers might be receptive to distributional considerations as well.¹⁴¹ Put another way, I use dispute resolution as my normative criterion. In a property dispute, how might policymakers foster a compromise between users and owners?

I acknowledge that many different criteria could inform policy choices. For example, one could seek to choose the best decisionmaker first—that is, the party that will make the most socially beneficial choices about how to

136. See *infra* Section III.C.

137. See *supra* Section I.B.

138. See Calabresi & Melamed, *supra* note 1, at 1093–98; see also Ayres & Talley, *supra* note 67; Kaplow & Shavell, *supra* note 35; Krier & Schwab, *supra* note 8.

139. See POSNER, *supra* note 63, at 14–17.

140. See *supra* note 63 and accompanying text.

141. See Calabresi & Melamed, *supra* note 1, at 1098–1101.

use the resource.¹⁴² Arguments rooted in values other than efficiency could also guide the policy choice.¹⁴³ For example, First Amendment values might suggest that users should have the power to decide whether to use a portion of an existing copyrighted or trademarked work.¹⁴⁴ My analysis represents just one contribution to a large set of possible criteria for policy choices.

I have also focused on comparing the two liability rules, Rule Two and Rule Four. By contrast, much of the existing literature focuses on the comparison between property rules and liability rules, between markets and regulation, between private actors and courts.¹⁴⁵ This makes perfect sense given the centrality of these questions to our politics.

There are many reasons policymakers might sensibly confine their attention to liability rules, however. One possibility is that both property rules—Rule One and Rule Three—are considered undesirable or infeasible to implement. Liability rules, by contrast, become especially appealing when the bargaining and decisionmaking costs of private transactions are relatively high and the costs of governmental assessment are relatively low.¹⁴⁶ Moreover, particular bargaining situations can give rise to several types of inefficiencies that make property rules less desirable: holdout problems,¹⁴⁷ hold-up problems,¹⁴⁸ royalty-stacking problems,¹⁴⁹ division-of-profit problems in the sequential-innovation context,¹⁵⁰ and so on. Sometimes liability rules are implemented mainly out of necessity, that is, because no transaction was possible. For example, think of a car accident and the applicable liability rules of tort law.¹⁵¹ Other times liability rules are put in place because of antitrust concerns.¹⁵² Enforcement and monitoring costs could

142. See Ayres & Goldbart, *supra* note 47, at 12–26. If one party proves more adept at assessing the facts of the situation, its superior information might be a compelling reason to grant it control.

143. See Calabresi & Melamed, *supra* note 1, at 1102 (discussing “other justice reasons”).

144. See *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569 (1994).

145. See, e.g., Robert P. Merges, *Of Property Rules, Coase, and Intellectual Property*, 94 COLUM. L. REV. 2655 (1994).

146. This requires explaining why the government has an informational advantage over the parties to the dispute. See Krier & Schwab, *supra* note 8, at 454–55. One possible explanation is a hold-up problem.

147. See Thomas J. Miceli & C.F. Sirmans, *The Holdout Problem, Urban Sprawl, and Eminent Domain*, 16 J. HOUSING ECON. 309, 311–12 (2007) (explaining the holdout problem).

148. See Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 1992–93 (2007).

149. See *id.* at 1993.

150. See Green & Scotchmer, *supra* note 61, at 20–21.

151. See Calabresi & Melamed, *supra* note 1, at 1108–09; Kaplow & Shavell, *supra* note 35, at 752–54.

152. See, e.g., DiCola & Sag, *supra* note 43, at 203–09 (discussing the antitrust conflict between radio broadcasters and the American Society of Composers, Arrangers, and Publishers, and describing the partly public, partly private liability rule instituted to ease that conflict); F.M. Scherer, *Antitrust, Efficiency, and Progress*, 62 N.Y.U. L. REV. 998, 1016–17 (1987) (discussing the Federal Trade Commission’s case against Xerox and the resulting remedy, which required compulsory licensing of patents).

also justify liability rules; imagine a situation like protecting copyright in an MP3 file, a situation in which a property rule is almost impossible to enforce *ex ante*.¹⁵³ Moreover, as long as exercising an option is voluntary, liability rules can also serve as a default rule that encourages bargaining.¹⁵⁴

Distributional concerns can also explain a preference for liability rules. Liability rules are less extreme in the way they distribute resources because they limit the rewards that the entitlement holder can demand. As a result, the disparity between the two parties' utilities will be smaller than it would be under a property rule. Suppose a particular dispute is contentious—both owners and users advance strong arguments that they should have the entitlement. In such a situation, it might be preferable, based purely on grounds of fairness in distribution, to choose one of the liability rules rather than one of the property rules.¹⁵⁵

Once the policymaker decides to implement one of the two liability rules, considerations of administrative efficiency, informational efficiency, or distributive fairness could lead to a choice of Rule Four over Rule Two. But the new model presented in Part II, which accounts for the value of control, uncovers a rationale for Rule Four that was previously buried: the possibility that both parties have the same preference for Rule Four over Rule Two.¹⁵⁶ This additional reason to choose Rule Four may arise once the field of policy choices has been narrowed to the two liability rules. From the perspective of the two parties' welfare, selecting Rule Four could be Pareto efficient.¹⁵⁷ Rather than setting up a zero-sum game, assigning entitlements and deciding how to protect those entitlements would represent an opportunity to generate mutual benefits.

Implementing this policy—choosing the liability rule that both parties prefer, if they agree on their preference—requires the right circumstances. Policymakers must identify a situation where the two property rules are either unappealing or unavailable. To do so, they would need to know that externalities do not tip the scale toward one side or the other. And, most importantly, policymakers would need good information about each party's preferences. In particular, the government would need a way to assess how

153. See TARLETON GILLESPIE, *WIRED SHUT: COPYRIGHT AND THE SHAPE OF DIGITAL CULTURE* 165 (2007) (describing failures of file-encryption efforts to enforce copyright). A liability rule can be made very expensive in order to mimic a property rule as closely as possible. But in some contexts such a strategy appears to generate little deterrence.

154. See Ayres & Talley, *supra* note 67, at 1058–61; Kaplow & Shavell, *supra* note 35, at 763–67. For particular applications, see Peter DiCola & David Touve, *Licensing in the Shadow of Copyright*, 17 STAN. TECH. L. REV. 397 (2014); Kristelia A. García, *Penalty Default Licenses: A Case for Uncertainty*, 89 N.Y.U. L. REV. 1117 (2014).

155. See, e.g., Michael J. Meurer, *Fair Division*, 47 BUFF. L. REV. 937, 942–43 (1999) (book review) (advocating the application of fairness considerations in law and economics).

156. See *supra* Section II.B.

157. Why couldn't the parties reach this result through a private transaction? In fact, they might do so. But while parties can contract around liability rules, inefficiencies might impede the necessary bargaining. My model builds on the standard law-and-economics approach, which accounts for transaction costs, including private information. See *supra* Section II.A.2.

much each party to a property dispute values control in and of itself. I explore these informational demands below and propose a method to begin measuring the value of control.¹⁵⁸

Policymakers should try to settle property disputes in a way that gives each party some positive benefits. In instances where policymakers have narrowed the options to liability-rule protections, they should seek mutually preferred policy options. Even when the property rules remain feasible, it may be useful for policymakers to understand parties' preferences more precisely and recognize that parties can value control for its own sake.¹⁵⁹ At a minimum, the set of policy options that policymakers consider in both property law and intellectual property law should include Rule Four, the reverse liability rule.¹⁶⁰

2. Determining How to Deploy Rule Four

Rule Four gives the property owner the option to block a particular use in return for paying the user a governmentally determined fee. In the real-property context, a resident subject to a nuisance could receive a special kind of injunction requiring her to pay a fee determined by the court.¹⁶¹ In the intellectual property context, an owner might pay a governmentally determined fee for the right to block a particular use of her invention or work. Control belongs to the owner. Compensation, however, flows to the user.

As emphasized above, each of Calabresi and Melamed's four rules is really a category containing many specific policies. Many variations are possible in terms of what kind of governmental institution sets the fee, whether the fee is tailored or untailored, and whether the rule applies to one-time disputes or repeated interactions.

Under Rule Four, any governmental institution may set the fee *f*₄, whether it is a legislature, a court, or an administrative agency.¹⁶² A legislature might set the initial fee and arrange for inflationary adjustments. Alternatively, a legislature could delegate rate-setting to an administrative agency.¹⁶³ In situations with more individualized disputes, courts might choose Rule Four as a remedy and craft an appropriate fee structure, along with imposing an injunction that covers the blocked use in question.¹⁶⁴

158. See *infra* Section III.C.

159. One reason is that parties can bargain in the shadow of liability rules. See *supra* note 154 and accompanying text.

160. This echoes a call made by intellectual property scholar Dan Burk. Burk, *supra* note 46, at 100–05; see also McLEOD & DiCOLA, *supra* note 18, at 261–66 (outlining a reverse liability rule for music sampling).

161. *Spur Indus., Inc. v. Del E. Webb Dev. Co.*, 494 P.2d 700 (Ariz. 1972).

162. See *supra* notes 104–106 and accompanying text.

163. The Copyright Royalty Board serves as the Rule Two analogue of this in copyright law. See 17 U.S.C. § 801 (2012).

164. See *Spur Indus.*, 494 P.2d at 706–08.

The fee that allows an owner to prevent use of her property under Rule Four could either be tailored or untailored.¹⁶⁵ A tailored fee refers to an individualized process by which the government determines the appropriate fee for a specific owner, based on its estimates of the harm each party would experience without the right to the use. This is what a court does when it implements Rule Four (or Rule Two) in a specific case. By contrast, an untailored fee would be an across-the-board price that all owners of a certain property type would face in order to exercise their option. Tailoring can be a matter of degree—that is, fees could be tailored to particular subgroups of owners.

Institutional design also requires choosing how many users the option will be valid against once it is exercised. Rule Four could offer owners the opportunity to block all uses of a particular type with a one-time fee. This design would mean that Rule Four allows owners to pay for stronger property rights if they want them.¹⁶⁶ Alternatively, Rule Four could proceed instance by instance, requiring the owner to pay a fee each time she wishes to block a particular user.¹⁶⁷ The one-time-fee version of Rule Four may not have a clear precedent in property law. But it looks a lot like offering owners stronger rights for a fee, except that the proceeds are paid to the user rather than to the government.¹⁶⁸ Thus, Rule Four could act like a costly screen, helping policymakers sort out which owners value blocking the use and which do not.¹⁶⁹ In sum, to implement Rule Four, policymakers must choose between a one-time fee and an each-time fee.

Like Rule Two, Rule Four need not prohibit voluntary transactions.¹⁷⁰ After paying the fee, the owner could always exercise the option and then license the use under modified terms. For instance, the owner could demand a higher licensing fee. Or, once she has exercised her option under Rule Four, the owner could offer the user a license that cabins the originally desired use to a use of more limited scope.

165. See, e.g., Ayres & Talley, *supra* note 67 (analyzing bargaining under both tailored and untailored compensation structures).

166. This one-time-payment structure would lead to a policy similar to one that requires renewal fees in order for copyrights or patents to last longer. See William M. Landes & Richard A. Posner, *Indefinitely Renewable Copyright*, 70 U. CHI. L. REV. 471, 477 (2003). The fee in Professor Landes and Judge Posner's proposal would be paid to the government, not to the user, which represents a significant difference. See *id.*

167. I discuss concerns about extortion below. See *infra* Section III.B.2.

168. I discuss concerns about wealth effects below. See *infra* Section III.B.3.

169. See David Fagundes & Jonathan S. Masur, *Costly Intellectual Property*, 65 VAND. L. REV. 677 (2012) (describing the effects and uses of costly screens); Jonathan S. Masur, *Costly Screens and Patent Examination*, 2 J. LEGAL ANALYSIS 687 (2010) (same); cf. Ayres & Talley, *supra* note 67, at 1039–47 (arguing that liability rules can have this screening effect).

170. For example, 17 U.S.C. § 115(a) (2012) creates a statutory license for reproductions and distributions of musical compositions, but parties to this license typically contract around the governmental license. DONALD S. PASSMAN, *ALL YOU NEED TO KNOW ABOUT THE MUSIC BUSINESS* 217 (9th ed. 2012) (“[T]he compulsory license is almost never used. . . . The copyright owners (publishers) would rather give a direct license because they can keep track of it easier.”).

This last possibility highlights the fact that Rule Four requires a governmental institution not only to set the fee but also to define the scope of the use in question. At the root of this analysis is a dispute over a particular use. When the government wishes to deploy Rule Four (or Rule Two, for that matter), it must specify the use that is subject to an option. In other words, the government must decide exactly what activities the owner may prevent the user from engaging in. Other uses can be subject to other rules—that is, the property can be disaggregated into a bundle of possible uses, with each use potentially subject to a different rule.¹⁷¹

Rule Four may also require some administrative apparatus to keep track of the exercised options, to collect fees, and to resolve disputes over the operation of the rule itself. These administrative costs are important to assessing the rule's desirability in the first place, since the costs represent one of liability rules' potential disadvantages compared with property rules.

B. *Obvious Problems and Design Responses*

Rule Four is an uncommon approach to assigning entitlements and vindicating property interests. It remains the missing rule. This absence probably reflects its several drawbacks. I call these drawbacks "obvious problems" because they tend to arise immediately in conversations about Rule Four. In this Section, I will discuss ways to mitigate these problems and suggest that the missing rule should be part of policymakers' toolkit after all.

1. Will the Government Get the Price Wrong?

Liability rules—both Rule Four and its mirror image, Rule Two—call for the government to set the price of an option, whether it is an option to block (Rule Four) or to use (Rule Two). In that sense, liability rules are heavier-handed intervention by the government than either of the property rules. Indeed, while all four rules for protecting entitlements require governmental enforcement of the boundaries, only the liability rules involve governmental price-setting.

Along these lines, Rule Four is objectionable to some because liability rules are undesirable, or at least suspect, in much the same way that all governmental price-setting is considered undesirable or suspect.¹⁷² A fair portion of the literature on property rules and liability rules focuses on debating this point.¹⁷³ And some of the political dissatisfaction with existing

171. See Calabresi & Melamed, *supra* note 1. But see Thomas W. Merrill & Henry E. Smith, *What Happened to Property in Law and Economics?*, 111 YALE L.J. 357, 366–75 (2001) (criticizing the bundle-of-rights view).

172. The policy preference for market actors to set or negotiate prices, which is based on economic thinking, has been ascendant in the United States since the late 1970s. See Stephen Breyer, *Airline Deregulation, Revisited*, BLOOMBERGBUSINESSWEEK (Jan. 20, 2011), <http://www.businessweek.com/stories/2011-01-20/airline-deregulation-revisitedbusinessweek-business-news-stock-market-and-financial-advice> (describing the political deregulation of the airline industry beginning in 1978).

173. Compare POSNER, *supra* note 63, with Kaplow & Shavell, *supra* note 35.

liability rules centers on complaints about the process of governmental price-setting (beyond the standard complaints that the price chosen is too low or too high).¹⁷⁴ Moreover, because of policymakers' relative unfamiliarity with Rule Four, one might be concerned that the lack of experience will make price-setting under Rule Four even more costly to administer and even less accurate than under Rule Two. Meanwhile, Rule One and Rule Three avoid price-setting entirely by leaving any transfers to private transactions.

Here, the economist's answer must be that it depends on the circumstances. Property rules and liability rules each have costs and benefits, drawbacks and attributes. The appropriate economic stance is one of agnosticism. Comparative institutional analysis is required to decide which method of protection is optimal. By highlighting some advantages of Rule Four in this Article, I mean only to argue that Rule Four should be considered on an equal footing with the other rules in the abstract. Governmental price-setting is subject to errors, but so is private price-setting. There may be circumstances in which the government is more likely than private actors to get the price (that is, the fee, f2 or f4) correct on average.¹⁷⁵ In that event, liability rules can be more efficient. Governmental price-setting may also be desirable in light of externalities or noneconomic policy considerations.¹⁷⁶ Thus, possible mistakes in governmental price-setting are only one factor to consider in the overall desirability of Rule Four.

2. Will Rule Four Lead to Extortion?

Perhaps the most common objection to Rule Four relates to the possibility of extortion.¹⁷⁷ The concern is that many sham users will threaten property owners with contrived, offensive, and damaging uses, all in an attempt to induce the property owner to pay them f4 for the use that must be blocked. This is the reverse of "coming to the nuisance"¹⁷⁸—in this scenario, the user is making himself a nuisance and taking advantage of the fact that Rule Four grants him the entitlement. What's worse, individual users might show up multiple times with phony claims about desiring to use the property in a particular way, essentially hoping to make the owner an ATM.¹⁷⁹

174. See *supra* note 42 and accompanying text (describing composers' complaints about the statutory license of 17 U.S.C. § 115).

175. Cf. Kaplow & Shavell, *supra* note 35, at 750–51 (discussing the efficiency of pollution taxes relative to that of tradable pollution rights).

176. See *supra* Section III.A.1 (discussing externalities and "other justice reasons" as possible justifications for liability rules).

177. See James Lindgren, *The Elusive Distinction Between Bribery and Extortion: From the Common Law to the Hobbs Act*, 35 UCLA L. REV. 815, 825 (1988) ("Broadly speaking, coercive extortion can refer to any illegal use of a threat or fear to obtain property or advantages from another, short of violence that would be robbery.").

178. "[C]oming to the nuisance" played a large role in *Spur Industries, Inc. v. Del E. Webb Development Co.*, a case that applied Rule Four. 494 P.2d 700, 706–07 (Ariz. 1972). Thus, the opposite of coming to the nuisance makes sense as a drawback of that rule.

179. Even worse, firms might arise to monetize and aggregate opportunities for extortion. Cf. Richard A. Epstein, *Blackmail, Inc.*, 50 U. CHI. L. REV. 553, 562–63 (1983).

And in the context of intangible property, it is inexpensive to find and use others' preexisting works, which exacerbates the general concern about extortion under Rule Four.

That Rule Four could be used in this strategic fashion is a real problem requiring administrative responses. To combat the issue, the government could offer an administrative process to allow owners to challenge a user's entitlement to f4 on grounds of bad faith.¹⁸⁰ Even the presence of some administrative costs and hurdles could be used as a screen to limit the entitlement to bona fide users.¹⁸¹ And Rule Four could be implemented with a cap to prevent the same user from instigating multiple disputes with the same owner. Alternatively, an individual owner might need to pay a fee only once to block an individual user from using the property within a certain period of time.

Another institutional-design possibility—one that takes the property regime out of the traditional Calabresi and Melamed framework but retains some features of Rule Four—would direct the compensation paid under Rule Four to the government rather than the user. The government could then distribute the fees to a class of users or likely users rather than to individual users. For example, if copyright law applied Rule Four to digital sampling, the fees collected when owners opt to block use could be aggregated and distributed to musicians' groups or arts organizations.¹⁸² Policymakers might decide that owners must pay into a fund that promotes expression precisely because the owners' decision to exercise the option has thwarted expression. For some readers, this particular implementation of Rule Four will only inflame their dislike of the proposal rather than ameliorate it. But it is one way to address the extortion issue.

3. Will Rule Four Create Unfair Advantages for Wealthy Owners?

Another important objection concerns the way in which Rule Four interacts with owners' wealth. Suppose that Rule Four were set up such that a one-time fee purchased the right to block any uses of a certain type. Under that version of the proposal, it is easy to imagine that wealthy owners would readily purchase the option to block use by others. Wealthy owners could purchase control rights as a routine cost of doing business. Users' entitlements to wealthy owners' property would not mean much in practical terms because the owners could always afford to block those entitlements.

180. In the copyright context, for example, challenges to bona fide use could be treated as small claims. The Register of Copyrights is exploring the possibility of implementing small-claims courts for copyright. See Maria A. Pallante, *The Next Great Copyright Act*, 36 COLUM. J.L. & ARTS 315, 327–28 (2013); see also INTERNET POLICY TASK FORCE, DEP'T OF COMMERCE, COPYRIGHT POLICY, CREATIVITY, AND INNOVATION IN THE DIGITAL ECONOMY (2013), <http://www.uspto.gov/news/publications/copyrightgreenpaper.pdf>.

181. See Fagundes & Masur, *supra* note 169, at 679–81 (“[Administrative costs and hurdles] are costly screens . . . [that] cause actors to self-select against acquisition of rights that will not generate much private value . . .”).

182. McLEOD & DiCOLA, *supra* note 18, at 265–66.

Next, suppose that Rule Four were set up as an every-time fee, requiring payment to block each use by each individual user. Under this regime, it is clear that poor owners would find it difficult to block multiple uses. They might end up at the mercy of users.

No property regime makes it easy to reduce or neutralize the effect of wealth in society. It would be unappealing to adjust *f4* for wealth because such an adjustment would make wealthy owners an especially attractive target for extortion. By contrast, the problem of disadvantaging less wealthy owners could be mitigated. One institutional-design choice would involve structuring *f4* as a small fraction of future sales of the owner's work. This solution in fact represents the mirror image of the statutory license for musical works, which operates on a per-copy basis.¹⁸³ In such a scheme, less wealthy owners could pay as they go.

4. How Can Rule Four Be Squared with Important Rights?

Giving an owner an option to block use, if not implemented properly and carefully, could interfere with important rights of users. In the real-property context, some uses might involve core interests. For example, in certain circumstances physical safety may require a trespass, as when a car jumps the curb and pedestrians must flee the sidewalk. In the intellectual property context, some uses might constitute fair use.¹⁸⁴ Because the fair-use doctrine allows for critical, educational, and other uses without permission or a license,¹⁸⁵ the doctrine crucially protects the First Amendment rights of users.¹⁸⁶ Rule Four raises the troubling prospect of owners' exercising their options to block expressive uses, uses of brand names, or research uses.

The legal response, while easily articulated, could prove complicated to implement. The simplest answer to the dilemma goes as follows: Rights like freedom of speech must occasionally trump property rights, just as they do under existing law. Regardless of which rule is chosen, doctrines like fair use or the research-use exemption take precedence.¹⁸⁷ Yet setting up formal procedures that vindicate those rights and privileges could be more difficult. And ensuring that these rights and privileges are meaningful in practice presents an even more complex task of institutional design. As one example, some are concerned that fair use is not practically beneficial in contexts like the music industry.¹⁸⁸

183. 17 U.S.C. § 115(c)(2) (2012) ("[T]he royalty under a compulsory license shall be payable for every phonorecord made . . .").

184. Fair use exists in both copyright law and trademark law. Patent law contains a limited exception for research use, which is certainly not equivalent to fair use but still represents an important right of users.

185. 17 U.S.C. § 107 (2012).

186. See Netanel, *supra* note 32, at 1105.

187. See, e.g., Litman, *supra* note 22.

188. See, e.g., McLeod & DiCola, *supra* note 18, at 238–40. But see PATRICIA AUFDERHEIDE & PETER JASZI, RECLAIMING FAIR USE (2011) (describing a best-practices approach to enhancing the practical utility of fair use).

A key question is whether implementing Rule Four would have complex repercussions that might upset the balance of power between owners and users. Without sound institutions to vindicate rights and without an understanding of how private institutions and private actors will respond to the system, it is difficult to predict how Rule Four could threaten rights and privileges—even if the black-letter law clearly indicated that these rights and privileges supersede owners' option to block use. I acknowledge this limitation and urge policymakers to take it seriously. When implementing Rule Four, they must engage in careful design and monitoring efforts in order to safeguard important rights.

In sum, if implementing Rule Four appears appropriate, there are ways to alleviate the concerns associated with it. I do not mean to minimize those concerns, nor do I intend to suggest that Rule Four should come to dominate our thinking about property, real or intangible. My point is rather that Rule Four is a tool that policymakers should keep in their toolbox and sometimes deploy. It could produce the best result in certain contexts, resolving disputes in a way that balances the interests of creators, users, and the general public. Adopting Rule Four as a background rule could also spur the parties to a property dispute, large or small, to bargain toward the best solution.

C. *Experiments with Rule Two and Rule Four*

Bringing Rule Four more fully into the policy conversation opens up the possibility of policy experiments.¹⁸⁹ Information about the parties' true valuations of reciprocal harm plays a central role in property disputes. Developing better information about the preferences of certain types of disputants could facilitate more efficient and more equitable resolution of their disputes. Employing Rule Four could help us develop that information.

Suppose that policymakers have found that a particular kind of property dispute is not amenable to either of the property rules.¹⁹⁰ Suppose also that there are a set of owners and a set of users who are involved in disputes with some relevant similarities. For example, think of the patent holders in mobile-phone technology as the owners and the manufacturers of mobile phones as the users. The preceding analysis has shown that, from each party's perspective, we cannot know a priori whether the parties will prefer Rule Two or Rule Four. Standard law-and-economics analysis demonstrates that the government must estimate the total harm to each party in order to choose its rule.¹⁹¹ This Article suggests that the government should also attempt to estimate what portion of the harm is due to the loss of control for its own sake.¹⁹²

189. On policy experiments generally, see Michael Abramowicz et al., *Randomizing Law*, 159 U. PA. L. REV. 929 (2011).

190. This can be a result of practical limitations in enforcement or of the inefficiencies that can arise in bargaining. See *supra* notes 146–155 and accompanying text.

191. See *supra* Section II.A.2.

192. See *supra* Section II.B.

How should the government go about this inquiry? By making Rule Four a plausible policy option in addition to Rule Two, the government would have the opportunity to set up a choice. One choice would be Rule Two, with fee f_2 set at a particular level. The other choice would be Rule Four, with fee f_4 also set at a particular level. Either party, as a subject in the policy experiment, would need to know both f_2 and f_4 in order to know what she would have to pay to exercise her option (if she chose the rule that gave her one) and what she would receive if the other party exercised an option (if she chose the opposite rule).

The fee levels could be varied on a random basis. For example, f_2 could be set at either 1% or 2% of the revenue the user derives from the use, while f_4 could vary between 3% and 5% of the revenue the owner derives from the property. Each party to a dispute of this type would then face a different menu of options. The choices would have real consequences, which means that each party would be revealing her true preferences.

By observing how the parties made their choices, the government could begin to learn about the harm that each party would experience. Over time, it would be possible to discern parties' subjective value of control from their choices. As discussed above, preferences between Rule Two and Rule Four depend on whether the parties expect the options to be exercised.¹⁹³ But this expectation could be measured in order to determine which of the four scenarios the parties expect to be in when choosing between rules. With that information, together with information about the level of fees, policymakers could infer how parties value harm as well as the portion of that harm attributable to the separate value of control.¹⁹⁴

Although in many examples I use the owners to illustrate the economic analysis, both owners and users must be subjects of the policy experiments. Balance and fairness require this symmetrical treatment. Whichever party gets to choose the legal regime receives a separate kind of benefit—a sort of meta-benefit—in the form of an opportunity to exercise control. There is no a priori reason to bestow that benefit on owners or users during the experimental period.

Allocating this benefit to one side or the other raises an important ethical problem that is endemic to experiments conducted in real-world settings. The nature of the experiment affects the parties' interests, perhaps profoundly. To address this reality, policymakers should test fee levels that are within a realistic range. Parties would still be free to bargain around the liability rule or to make a transaction after the option is exercised.

Conducting these policy experiments with both owners and users as subjects, and giving individuals in each position the choice between Rule Two and Rule Four, would help identify instances where the two sides' preferences actually align. Policy experiments might reveal that most owners (in a certain type of dispute) prefer Rule Four and that most users also prefer Rule Four. The same could be true of Rule Two. Such a situation presents an

193. See *supra* Section II.B.4.

194. See *supra* Section II.B.5.

opportunity for compromise through choosing the mutually preferred rule.¹⁹⁵ Without conducting the policy experiments, identifying these opportunities would rely too heavily on speculation.

IV. APPLICATIONS

This Part proposes some specific areas of the law where Rule Four might be deployed—or at least considered. My goal is to outline a new analytical framework, spark discussion, and suggest a research agenda.

A. Copyright

Because copyright law deals with original works of expression, disputes about control and creative autonomy often arise. In copyright disputes involving an upstream copyright owner—creator and a downstream creator,¹⁹⁶ for example, both sides usually seek and value control independent of financial rewards. Thus, copyright is a natural area to incorporate the value of control into law-and-economics analysis.¹⁹⁷

One way to see the usefulness of valuing control—and of considering Rule Four as a viable approach to copyright disputes—is by process of elimination. In copyright, Rule One—meaning property-rule protection for copyright owners—has become difficult to enforce in many circumstances. Unauthorized file-sharing’s traffic has declined somewhat in recent years, but the practice continues on a large scale worldwide.¹⁹⁸ Moreover, Rule One does not always lead to a robust licensing market; on the contrary, copyright licensing can be cumbersome on both a small and large scale.¹⁹⁹ Strong property rights can backfire on copyright owners.

Rule Three—property-rule protection for copyright users—has shortcomings as well. The rule applies to situations in which works or aspects of works are in the public domain, broadly conceived.²⁰⁰ It is a commonplace

195. See *supra* Section III.A.1.

196. The other broad categories are owners more generally (who might not be the creators) versus downstream users more generally, owners versus consumers, and aggregate owners versus distributors—new technologists. Parties in these other categories might value control in and of itself, but such a situation is harder to imagine for corporate actors on either side of the dispute. Managers might place psychological value on control, but they are distinct from the entity that employs them, which makes the welfare analysis more complicated.

197. See *supra* Section II.B.

198. See generally SANDVINE, GLOBAL INTERNET PHENOMENA REPORT 1H 2014 (2014), available at <https://www.sandvine.com/downloads/general/global-internet-phenomena/2014/1h-2014-global-internet-phenomena-report.pdf> (describing the declining portion of global internet traffic devoted to file-sharing but noting the continued prominence in many countries of file-sharing applications like BitTorrent).

199. See McLEOD & DiCOLA, *supra* note 18, at 158–86 (describing the inefficiencies of sample licensing); DiCola & Touve, *supra* note 154, at 442–52 (describing the inefficiencies in licensing digital music services).

200. See Jessica Litman, *The Public Domain*, 39 EMORY L.J. 965, 976 (1990) (“But the class of works not subject to copyright is, in some senses, the least significant portion of the public domain. The most important part of the public domain is a part we usually speak of only

to criticize fair use for being unpredictable,²⁰¹ but that claim turns out to be exaggerated.²⁰² A more trenchant critique is that, in some industry contexts, fair use is not utilized.²⁰³ Besides, in certain circumstances Rule Three will have distributional consequences that are too extreme; sometimes the copyright owner should have a claim to some of the value that stems from the use.

Now consider Rule Two in the copyright context. The copyright statute contains several statutory licenses,²⁰⁴ and copyright owners bristle when Congress imposes such licenses.²⁰⁵ But their displeasure is not necessarily a reason to discard Rule Two—policy compromises will probably leave every party at least a bit unhappy, and some of the complaints may amount to grandstanding for a higher fee. But there are real problems with copyright's statutory licenses. Some upstream creators who value control highly would be dismayed at losing the right to deny permission to use their work to downstream creators.²⁰⁶

At this point, the process of elimination leads one to wonder whether Rule Four has some traction in certain types of copyright disputes. Suppose that tailoring the fees under either liability rule is prohibitively expensive from an administrative standpoint, such that untailored versions are preferred. Where the value of the harm to the copyright owner (whether the financial harm or the value of control) is highly idiosyncratic, an untailored version of Rule Two becomes unappealing.

But an untailored version of Rule Four allows policymakers to limit the harm to copyright owners who would otherwise experience harm greater than the fee *f*₄ if the use occurred. Rule Four gives the downstream creator the entitlement to the use, subject to an option held by the copyright owner. This bestows on the copyright owner the power to object to certain uses, at a cost. On the other side of the dispute, the downstream creator might be willing to find a substitute for a particular audio sample, text snippet, or video clip. Such substitutes can sometimes be serendipitous.²⁰⁷ Rule Four,

obliquely: the realm comprising aspects of copyrighted works that copyright does not protect.”).

201. See, e.g., David Nimmer, “*Fairest of Them All*” and *Other Fairy Tales of Fair Use*, 66 LAW & CONTEMP. PROBS. 263, 279–84 (2003).

202. See, e.g., Matthew Sag, *Predicting Fair Use*, 73 OHIO ST. L.J. 47 (2012) (conducting an empirical study of fair use showing that some variables are predictive of results in fair-use cases).

203. See *supra* note 188 and accompanying text.

204. E.g., 17 U.S.C. § 115 (2012) (reproductions of musical works); *id.* § 116 (jukeboxes); *id.* § 119 (satellite retransmission of video).

205. See *supra* note 42 and accompanying text.

206. See *supra* note 42 and accompanying text. On the psychology of creators more generally, see Gregory N. Mandel, *To Promote the Creative Process: Intellectual Property Law and the Psychology of Creativity*, 86 NOTRE DAME L. REV. 1999 (2011). See also Jessica Silbey, *Harvesting Intellectual Property: Inspired Beginnings and “Work-Makes-Work,” Two Stages in the Creative Processes of Artists and Innovators*, 86 NOTRE DAME L. REV. 2091 (2011).

207. See McLEOD & DiCOLA, *supra* note 18, at 104–06, 189–94.

however, would recognize the burden of blocked sampling, remixing, and other reuses by compensating the thwarted sampler for having to adjust. Although this cost might vary across users, it could have less variance than the idiosyncratic value of control to copyright owners. When that is the case, Rule Four is preferable to Rule Two because the government would have a better chance of correctly setting f_4 than f_2 . For these reasons, copyright policymakers should begin to consider Rule Four.

My point here is certainly not that Rule Four should become the norm in copyright. I am claiming only that Rule Four could prove useful in some situations.

In certain circumstances, the desire for control over copyrighted works is an unsympathetic, even unconstitutional, position. Giving control to copyright owners can serve merely to block the free expression of downstream creators for petty reasons. It is worth remembering, however, that giving control to copyright owners is a feature of both Rule One and Rule Four. The idea-expression dichotomy and fair-use doctrine provide safeguards for speech,²⁰⁸ and they can be applied to either rule. These doctrines effectively switch the property regime to Rule Three where First Amendment values call for doing so. But in other contexts it is easier to sympathize with the copyright owner's desire for control. Suppose a creator's artwork is used in an advertisement against her will. Or suppose a musician's song becomes the soundtrack to a political campaign for a candidate he vehemently opposes. A statutory license could seem undesirable, even harmful to free speech, if it places extreme burdens on interests in personality or identity.

B. Trademark

Individuals value control in trademark disputes as well. One of the most controversial developments in trademark law in recent decades has been the expansion of trademark protection against dilution.²⁰⁹ In a dilution claim, the owner of a trademark complains that the mark has been used in connection with an unrelated good; consumer confusion about source need not come into play.²¹⁰ Several scholars criticize this development as improperly expanding trademark's focus to encompass unfair competition.²¹¹ Other commentators defend the historical roots of this approach.²¹² The area clearly remains contentious.

Currently, trademark law considers three of Calabresi and Melamed's rules. It allows a trademark owner to get an injunction after a finding of

208. See Netanel, *supra* note 32, at 1106–13.

209. See generally Jerre B. Swann, *The Evolution of Dilution Law in the United States from 1927 to 2006*, in INTERNATIONAL TRADEMARK DILUTION §§ 3:1–3:30, at 40–97 (2013 ed. 2013).

210. Mark A. Lemley, *The Modern Lanham Act and the Death of Common Sense*, 108 YALE L.J. 1687, 1698 (1999).

211. See, e.g., Robert G. Bone, *Schechter's Ideas in Historical Context and Dilution's Rocky Road*, 24 SANTA CLARA COMPUTER & HIGH TECH. L.J. 469, 472–74 (2008); Rebecca Tushnet, *Gone in Sixty Milliseconds: Trademark Law and Cognitive Science*, 86 TEX. L. REV. 507 (2008).

212. See, e.g., Swann, *supra* note 209, § 3:15, at 67–68.

dilution—that is Rule One.²¹³ Damages are rare but possible; that would be Rule Two.²¹⁴ And in the event that no dilution is found or a defense is successful, the particular use would be handled with Rule Three.²¹⁵ Again, Rule Four is missing.

But Rule Four should be considered in trademark law. An option to block certain uses of trademarks would be one form of compromise between trademark owners and users, particularly in some of the harder dilution cases. For instance, consider disputes where the marks are identical but non-competing.²¹⁶ A user is less likely to harm an owner through using a trademark in a noncompeting market than she would be in a competing market. My sense is that trademark dilution has been too broad, so I would advocate for some cases currently handled with Rule One to be handled instead with Rule Four. Under a Rule-Four approach, if the user must be denied control, at least the rule compensates the user when a trademark owner wishes to block a use.

Another area in which Rule Four might prove beneficial is expressive uses of trademarks. In most cases, Rule Three may serve as the best approach to protecting users' rights to use trademarks, and this seems to be the status quo.²¹⁷ But it may be worth exploring whether there are some types of uses that are more ambiguous in character and in which the owner's claims are more sympathetic. Rather than facing a stark choice between Rule One and Rule Three, policymakers could use Rule Four in a limited way to vindicate owners' value of control—in cases where doing so is legitimate. This would require carefully delineating the boundaries of the expressive uses to which Rule Four applied instead of Rule Three.

C. Patent

Unlike the other areas of intellectual property law, patent law seldom seems influenced by considerations of personal autonomy. But there are exceptions. Consider university researchers who wish to donate their work to the public domain but have concerns that others will misuse their invention in various ways—for example, by selling knock-off versions that take advantage of consumers.²¹⁸ Statutory invention registrations are another instance

213. 4 J. THOMAS MCCARTHY, MCCARTHY ON TRADEMARKS AND UNFAIR COMPETITION § 24:132 (4th ed. 2014) (describing remedies under the federal antidilution statute).

214. *Id.*

215. *See id.* § 24:123 (providing an overview of defenses to the federal antidilution statute).

216. *Cf. id.* § 24:68 (discussing the core purpose of dilution in the course of criticizing antidilution law's expansion beyond that purpose).

217. *See* William McGeeveran & Mark P. McKenna, *Confusion Isn't Everything*, 89 NOTRE DAME L. REV. 253, 287–91 (2013) (“[C]ourts seem increasingly to understand the importance of protecting the type of expressive uses we have highlighted . . .”).

218. *See* Grischa Metlay, *Reconsidering Renormalization: Stability and Change in 20th-Century Views on University Patents*, 36 SOC. STUD. SCI. 565, 572–73 (2006) (describing the attitudes of the developers of insulin).

in which inventors exert a degree of control and ensure that others cannot patent the registered technology.²¹⁹ These examples suggest that control can be a value for some inventors.

Thus, in some circumstances it could be socially beneficial to vest users of patented technologies with the entitlement but allow the patentee to retain an option to block certain uses for a fee. Rule Four therefore merits further investigation in the area of patent policy.

D. Privacy

Privacy is a multifaceted concept.²²⁰ Digitization, internet connectivity, national-security initiatives, social networking, and other features of contemporary life have brought privacy to the center of policy discussions.²²¹ Rule Four should be part of policymakers' thinking about the particular solutions that involve ownership of personal data. Privacy law provides a perfect example of the decoupling of compensation and control. In the privacy debate, individual consumers and citizens care about control for its own sake.

To make this observation concrete, consider the four rules as applied to personal data.²²² Imagine a search company, an online retailer, or a social-networking company that wishes to collect, aggregate, and perhaps even sell personal data. Rule One would mean that individuals could obtain an injunction to prevent the company from collecting or retaining those data at all. Rule Two would mean that damages were available to individuals, but companies willing to pay the fines could proceed in collecting, aggregating, and selling the data and regard the fee as a cost of doing business.²²³ Rule Three would mean that the companies could use the data they collect from individuals without repercussions. Perhaps one of these rules seems appealing, but none of the approaches has yet caught on or been proven effective.

Rule Four has some attributes as a compromise that I have not seen anyone consider in the privacy debates. The rule would give decisionmaking authority to individuals but would require them to pay a governmentally set fee to retrieve the data, a requirement that recognizes the investment that online companies have made in collecting that data. The fee might be set very low, perhaps at five or ten dollars, which would enable many citizens to

219. See J. Jonas Anderson, *Secret Inventions*, 26 BERKELEY TECH. L.J. 917, 976 (2011) ("The statutory invention registration allows inventors to publish inventions that they do not intend to patent in a manner that precludes others from patenting the invention.").

220. See Daniel J. Solove, *A Taxonomy of Privacy*, 154 U. PA. L. REV. 477 (2006).

221. See Daniel J. Solove, *Introduction: Privacy Self-Management and the Consent Dilemma*, 126 HARV. L. REV. 1880, 1880, 1888–89 (2013) (describing modern issues that have given rise to new discussions in privacy law).

222. See Jane Yakowitz, *Tragedy of the Data Commons*, 25 HARV. J.L. & TECH. 1, 6–7 (2011) (defining "personally identifiable information").

223. This depends, of course, on the level of the fee f_2 . It does not appear that fines have deterred companies from collecting personal data, but that is just my impression.

pay the fee to the online companies they deal with most. And while consumer advocates would certainly prefer Rule One, perhaps Rule Four represents a compromise worth putting on the table.

CONCLUSION

Recognizing the value of control for its own sake has important consequences for academic analyses and policy resolutions of property disputes. By relaxing a single assumption in the standard law-and-economics account of property rules and liability rules, I have shown that having the entitlement to a particular use of property is not always preferable—if the entitlement will be protected only by a liability rule. Moreover, I have derived the specific conditions under which that will be the case.

This economic analysis should give new life to the missing Rule Four. It also suggests that the government should learn about the preferences and values of the parties to property and intellectual property disputes, possibly through engaging in policy experiments. I have provided some broad suggestions about how Rule Four, along with the idea of decoupling compensation and control more generally, could be useful in the areas of copyright, trademark, patent, and privacy. Future work could explore the details of implementing such a policy in these areas, identifying both the benefits and the pitfalls.

Certain disputes over property—such as those involving digital sampling, trademark dilution, and personal data—are difficult to resolve because both sides have compelling interests. Sometimes, both parties will have an interest in being the decisionmaker. Sometimes, both parties will seek mainly financial rewards. But in certain cases, one party will value control more than compensation. We should look to identify these instances and craft policy compromises accordingly.